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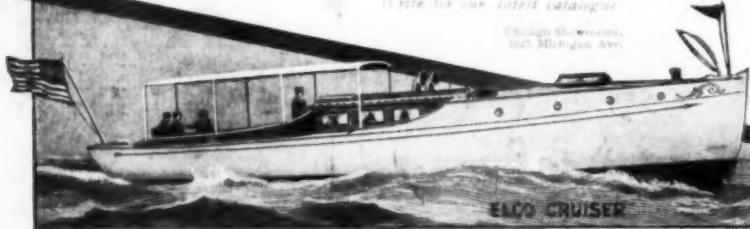
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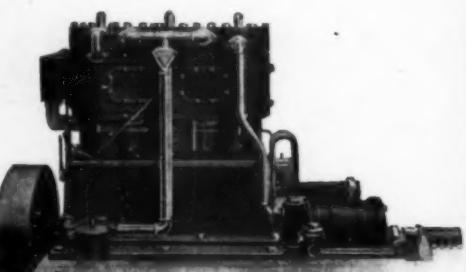
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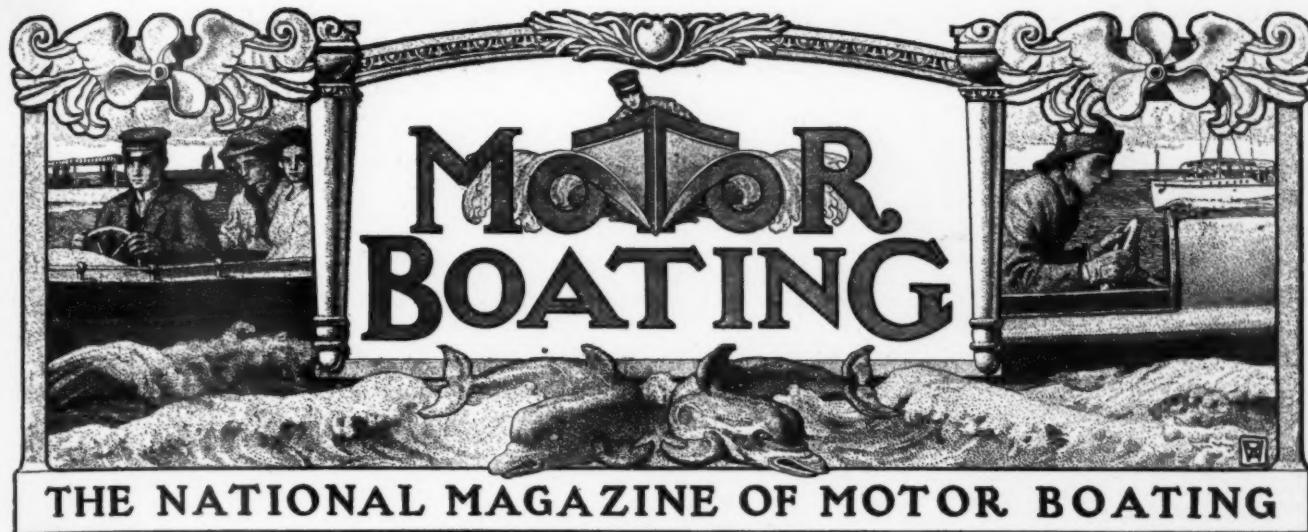
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The New York-Bermuda Race.

History of the Pioneer Long Distance Motor Boat Race and Boats That Have Competed.
Records Made in the Past and the Conditions for This Year's Contest.

ALTHOUGH, upon going to press, it is still too early to predict with any degree of accuracy what boats will be entered in the Bermuda race, it is safe to say that in view of the fact that several of the Havana racers are possible entrants and that one boat has been built especially for the race, the entry list will be as large as it was last year and possibly larger.

This year's will be the fourth annual event since the institution of the New York to Bermuda race in 1907, when Ailsa Craig established a record of 65 hrs. and 49 min. for the course of 650 nautical miles. Ailsa Craig, a 60-footer, designed by A. Carey Smith, and built especially for the race, was powered with a Craig 60 horse engine. Idaho was the only other competitor. She was designed by W. B. Stearns, of Marblehead, as a summer cruiser and was powered with a 25 horse Standard motor.

This race, for the James Gordon Bennett Cup, was the first of its kind on record, and its announcement naturally was received with skepticism. But when it had proved its success despite the numerous forebodings and criticisms, and the performances of the boats had justified the expectations of those enthusiasts who had conceived it, Mr. Bennett offered another cup, known as the James Gordon Bennett Challenge Cup, with the condition that it must be won three times by the same owner before it should be awarded permanently. At the same time a prize of \$1,000 was offered for all future races.

In 1908 but little interest was evinced in the contest, and for a while it looked as though Ailsa Craig would be the only entry. Mr. S. W. Granberry, however, came gallantly forward and entered Irene II, a boat that he had built for the

Marblehead race. She was equipped with a Standard engine of only 18 h. p., and although she was sadly outclassed by Ailsa Craig, her behavior on the trip was further evidence of the possibilities of motor driven boats for long distance work.

Last year four boats competed in the Berumda race: Ilys, owned by J. G. N. Whittaker, of the Yachtsmen's Club of Philadelphia; Nereides II, owned by Francis Rogers, of Camden, N. J., a member of the Cape May Yacht Club; Heather, owned by Richard Levering, of Cincinnati, and Insep, owned by William Cooper Proctor, of Cincinnati.

The race was won by Heather, whose elapsed time was 80 hrs. 56 min. and 18 sec., considerably greater than the record established in 1907. Heather and Insep are both 58 feet over all, 53 feet on the water line, with beam of 12 feet and draught of 4 ft. 6 inches. Heather carried a six-cylinder Standard motor of 6-inch bore and 8-inch stroke, rated at 40 H. P., and turning a propeller 34 inches in diameter and 42 inch pitch. Insep's motor was a 50 horse power Jager.

Ilys, designed by Thos. B. Bowes, has been described in detail recently in connection with the Havana Race. She is 50 feet 3 inches over all, 47 feet 6 inches on the water line, with beam of 10 feet 6 inches and draft of 3 feet 3 inches. She was powered with a 4-cylinder medium weight Hall delivering 25 horse power at 600 revolutions. Nereides II, a 55-footer of 11 foot beam and 4 feet 6 inches draft, carried a 40 horse power heavy duty Sterling engine.

The race started from Gravesend Bay on the 5th of June, and was one of keen interest from the start, for the contestants. As the course lies directly out to sea there was little

The New York to Bermuda Motor Boat Race.

Course, 650 Nautical Miles.

Best time made by Ailsa Craig in 1907, 65 hrs. 49 min.

Year	Boats	Length	Motor	Winner	Elapsed Time	Corrected Time
1907	Ailsa Craig	60 ft.	60 h.p. Craig	Ailsa Craig	65 hrs. 49 min.	65 hrs. 49 min.
	Idaho	60 ft.	25 h.p. Standard		75 hrs. 2 min.	65 hrs. 5 min. 22 sec.
1908	Ailsa Craig	60 ft.	60 h.p. Craig	Ailsa Craig	66 hrs. 33 min. 30 sec.	66 hrs. 32 min. 30 sec.
	Irene II	40 ft.	18 h.p. Standard		90 hrs. 40 min.	70 hrs. 16 min. 36 sec.
1909	Heather	58 ft.	40 h.p. Standard	Heather	80 hrs. 56 min. 18 sec.	80 hrs. 56 min. 18 sec.
	Nereides II	56 ft.	40 h.p. Sterling		91 hrs. 10 min.	83 hrs. 46 min. 36 sec.
	Ilys	50 ft.	25 h.p. Hall		96 hrs. 6 min.	91 hrs. 51 min. 7 sec.
	Insep	58 ft.	50 h.p. Jager		97 hrs. 45 min.	97 hrs. 12 min. 1 sec.
1909	Bermuda to New York			Ilys	78 hrs. 52 min.	
					80 hrs. 15 min. 34 sec.	
					101 hrs. 43 min.	

possibility of hearing from the boats until the finish, and on June 9th word was received by cable from Bermuda that Heather had won having beaten the other three boats by more than their time allowances.

Leaving Hamilton Harbor on Monday, June 14th, three of the boats, Ilys, Heather and Insep started on a race back to New York for the cup offered by the Crescent Athletic Club of Bay Ridge. Ilys led for the entire distance, making the run in 78 hours, 52 minutes and 50 seconds.

The Bermuda Race this year will be held as heretofore under the flags of the Royal Bermuda Yacht Club and the Motor Boat Club of America. The start will be made on June 25th from a point in the Hudson opposite the Club House of the New York Motor Boat Club at 147th Street instead of from Gravesend Bay, a much more satisfactory arrangement in that it will allow New Yorkers to see the start without the former inconvenience and loss of time. The ratings will be calculated under the 1909 rule of the American Power Boat Association and the conditions of the race differ but slightly from those of last year. The race this year will be open to boats of from 40 to 100 feet over all instead of from 40 to 70 feet as has been the case in the past.

Instead of restricting the use of sails as in last year's conditions, which provided that with the exception of a jib to help in steering, the sails should be sealed up and only used in case of emergency, the new conditions provide for the use of sails which may be of any shape, but must be sufficient to give the boat steerage way and a moderate breeze, the only restriction being that the sail area must not exceed one-eighth of the over all length of the boat.

The conditions for this year's Bermuda Race are as follows:—

Race.—From a starting line on the Hudson River off the club house of the New York Motor Boat Club, foot of 147th Street, to a stakeboat off St. Davids Head, Bermuda, placed by the Royal Bermuda Y. C.

Prizes.—The possession of the James Gordon Bennett Challenge Cup to the boat finishing first and \$1,000 in cash. A second prize if three or more boats start, and a third prize if five or more boats start.

Boats.—Open to seaworthy boats not over 100 feet over all nor under 40 feet over all. A seaworthy boat is a substantially built, full decked vessel, having engine and living accommodations housed in and being equipped with all the tackle and appliances necessary to enable her to perform a long passage in open water.

Rating.—Will be calculated under the 1909 Rule of the American Power Boat Association as last year.

Time Allowance.—Shall be figured according to the American Power Boat Association time allowance table, the distance for computation for allowance to be on a basis of 670 nautical miles.

Propelling Power.—Any form of internal combustion engine may be employed for propulsion purposes.

Fuel.—The Regatta Committee, comprehending that those entering the race have a thorough knowledge of the fuel necessary to make the passage, does not specify any quantity, but the same must be sufficient to complete a distance of at least one and one-half times the distance between New York and Bermuda. No ingredient shall be used to increase the power of fuel.

Sails.—Boats must be equipped with suitable spars and rigging to carry sufficient sail to give them steerage-way in a moderate breeze. This sail may be spread in any shape, but the total area of canvas must not exceed in square feet the square of the over all length of the vessel divided by eight as a constant.

Stores and Water.—Stores and water sufficient for thirty days must be carried.

Crew.—No boat will be allowed to start with less than six men aboard, one of whom shall be a practical navigator, one a practical engineer, and at least half of each crew must be amateurs.

Equipment.—A boat or life-raft must be carried of sufficient buoyancy to save the whole crew, or else two boats or a boat and raft. Also a ring-buoy or life-jacket for each member of the crew. A full set of navigating instruments, a spare compass, sea anchor, oil bag, and at least one gallon of crude petroleum or other oil, and fire extinguishers must be carried. Suitable arrangements for fitting an emergency tiller must be made. An assortment of spare parts and gear to the satisfaction of the committee must be carried. All boats must be equipped with the fittings and appliances prescribed by the Government.

Tanks.—Fuel must be carried in at least two distinct and fixed tanks permanently piped and connected. Fuel for lighting or cooking purposes may be carried in separate tanks. The carrying of fuel in cans or other temporary receptacles is forbidden.

Water must be carried in at least two separate tanks, all tanks to be securely fitted and fastened to the hull of the vessel to the satisfaction of the committee.

Entries.—Entries will be received up to five days before the start of the race. There will be no entrance fee.

Measurement and Inspection.—All contestants must be measured by the official measurer not later than the second day previous to the start. The fee for measurement will be \$10. All contestants must report to the Regatta Committee and official measurer for the purposes of inspection and measurement, at the anchorage of the New York Motor Boat Club, Hudson River, foot of 147th Street, at 10 o'clock on the morning of Thursday, June 23.

Protests.—Protests covering violations of sailing rules must be made in writing within twenty-four hours after finish of race. Protests regarding ratings must be filed in writing with the Regatta Committee previous to the start of the race.

Start.—The start will be made Saturday, June 25th, at 10 A. M., from a point on the Hudson River, off the New York Motor Boat Club station, foot of 147th Street.

Note.—The committee reserves the right to reject any entry if, in its judgment, the boat is unseaworthy or unsuitable for long-distance racing, or is deficient in any particular.

All entries will be accepted by the Regatta Committee previous to the start.

The committee urges strict compliance with the letter and spirit of the conditions as above stated, and will be pleased at any time to inspect plans or boats under construction.

The James Gordon Bennett Challenge Cup is a trophy presented for annual competition and must be won three times by the same owner before being awarded permanently.

The first race for this trophy was held in 1908 and was won by Ailsa Craig, of the Motor Boat Club. The second race, in 1909, was won by Heather, of the Shelter Island Y. C.

Regatta Committee:

CHARLES P. TOWER,
F. K. BURNHAM,
MORRIS M. WHITAKER.

Secretary:

WALTER M. BIELING.

Representing Royal Bermuda Y. C.:

THOMAS FLEMING DAY.



The James Gordon Bennett Challenge Cup.



Soya, winner of last season's Puget Sound Long Distance Race, will probably be entered in the Alaska-Seattle race.

Activities on the Pacific Coast.

The Alaska-Seattle Motor Boat Race and the Puget Sound Long Distance Race. Two Events that Prove the Popularity of Motor Boating in the West.

FOR two years the Pacific International Power Boat Association has had in mind a cruise to southeastern Alaska and a race back. While its feasibility has never been a matter of doubt in the minds of its originators, the difficulties to be overcome were such as to require a lot of thought and work.

Although for years the trip to Alaska by both the "inside" and "outside" passages had been accomplished by gasoline launches of limited size, the animating purpose in almost every instance had been a commercial one. It took a long while to convince motor boatmen in general that the pleasure derived from such a trip could compensate for the hardships and dangers—usually magnified—which might be encountered by small boats in the hands of amateurs; but after two or three bold pioneers had printed stories of trips made by them in boats of 50 feet and under, and published pictures of the novel scenes through which they had passed, considerable interest was awakened. The trip to Alaska by motor boat became a common occurrence. Some adventurous spirits even went so far as to accomplish it in open boats or small hulls roofed over with temporary rough cabins. Even to Nome and Siberia, boldly out into the waters of the Pacific and Behring, went stanch, heavy-timbered, chunky cruisers hunting for seal and walrus, or trading with the natives of almost unknown islands.

The original idea of the race committee was a race starting at Juneau, stopping en route at Ketchikan, Prince Rupert and Vancouver, ending at some Puget Sound point, presumably Seattle. After consultation, however, it was decided to make two races if possible, one from Juneau to Ketchikan, the other, a non-stop race, from Ketchikan to Puget Sound. Up to the time of writing the efforts of the committee have been concentrated on the last named race, the Juneau-Ketchikan event being left to the discretion and care of the motor boat enthusiasts living in those two districts.

The six weeks planned by the committee will afford ample time to cruise as far north as Skagway, the terminus of the White Horse and Yukon Railroad. This will afford an opportunity for a pretty careful study of the waters over which the race will be held. The fact that the course is optional will place a premium upon such information.

The shortest distance traversed by steamers is approximately 660 knots, but as one prospective contestant said, "This race will be won by the man who has the courage to wait." The application of

this remark is almost epigrammatic. A glance at the chart published in connection with the "United States Coast Pilot" of the District from Dixon Entrance to Yakutat Bay will confirm this statement. Islands huddling close to the mainland form a perfect net work of channels through which the daily tides pour back and forth in a manner apparently at sword's point with all established precedents. This is the famous "Inside Passage" to Alaska, which in many instances has proved a misnomer. Occasionally in the course from Puget Sound to Skagway comes a break in the chain of islands, leaving a stretch of the open Pacific where a twenty-mile breeze will stir up a sea that makes even the stanchest of steamships roll ports under. On the other hand, Dixon Entrance, Milbank Sound and Queen Charlotte Sound may frequently be crossed during the summer months in a row boat. It is this uncertainty of weather which has caused the committee to ask the United States Government to station patrol vessels at the dangerous parts of the course during the race.

The probable course taken in the cruise northward will be from Seattle up the west coast of Whidby Island through Deception Pass on into the Gulf of Georgia past Vancouver, where the Vancouver boats will join in, up the east coast of Texada Island either through Okishollow Channel and Surge Narrows, or Seymour Narrows and the Euclatow Rapids, the former being the least familiar of the two alternative courses at this juncture. From the standpoint of the amateur this is one of the most dangerous portions of the course. Seymour Narrows is marked dangerous on all charts. If approached at the proper stage of the tide there is absolutely no danger. On the other hand, any craft dragged into its narrow, treacherous whirlpools during the run of the tide would shortly find itself engulfed in some of the swirling eddies.

Surge Narrows are equally variable. This narrow channel derives its name from the roar of the water rushing over its rocky bed at a rate of over twelve miles an hour. This roar can be heard for over five miles, but at slack water it is like a mill pond. No wonder the epigrammatic observer said, "Wait!"

Alert Bay, 185 miles north of Vancouver, makes an interesting stopping place. Queen Charlotte Sound, the next open body of water to be crossed, is not very far north from Alert Bay. It is about thirty miles across. Once up Cape Calvert and into Fitzhugh Sound this dangerous piece of water is passed;



Route from Ketchikan, Alaska, to Seattle.

through Lama Passage and Seaforth Channel, the most used course. Proceeding, Milbank Sound is the next piece of open water but only about thirteen miles across. Continuing up the east coast of Princess Royal Island through Finlayson Channel across Wright Sound to the friendly protection of Pit Island and Granville Island into Chatham Sound and

sail will be allowed, but the method of restricting the same has not been decided upon. Each boat must take at least a crew of six, one of whom may be a professional navigator. But the boat must be entered and commanded by a member of the Pacific International Power Boat Association. An accurate log must be kept and handed to the committee.

The exact time and place of the start, and place of finish, the committee in charge, entrance fee, final details concerning trophies, and other matters will be decided upon in the near future. About twelve boats so far have signified their intentions of competing in the race, while twenty or more owners are already thinking of taking the cruise. Invitations will be sent out to the Governors of Alaska and of Washington to officiate at the start and finish.

The twelve boats mentioned include Soya, winner of last year's long distance Puget Sound race, whose dimensions are 59 feet over all by 11 ft. beam, equipped with a 60 h. p. Speedway replacing a 25 h. p. Eastern Standard. Soya, formerly the property of Ex-Commodore R. H. Parsons of the P. I. P. B. A., is now owned by B. R. Lewis, of Spokane.

Limit, another of last year's contestants, has been sold by her owner, E. L. Kinman, of Vancouver, B. C., to a syndicate headed by A. W. LePage, also of Vancouver. Limit is 54 feet over all and has two 30 h. p. Ralaco engines.

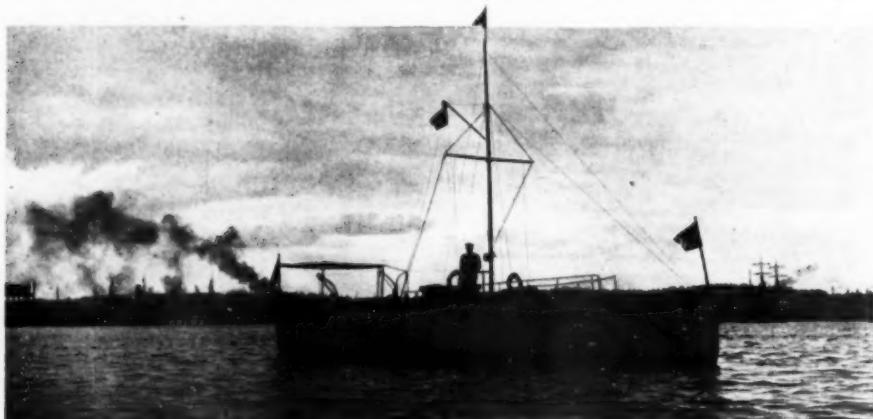
Marana II, a 42-foot replica of Ilys, now being built for B. F. Jacobs, of Tacoma. She will be equipped with a 30 h. p. Buffalo.

Easthope Brothers, of Vancouver, are just completing a powerful 54-foot cruiser, which will have in it one of their engines of 40 h. p.

J. R. VanDyke, of the Everett Yacht Club, has a 45-foot cruiser of his own design, which will have a 25 h. p. Atlas, and is just coming out of the shops at Everett, Wash.

Gloria, owned by Theo. Wilts, of Seattle, has had a 10-foot insertion amidships, making her 45 feet over all with a 12 h. p. heavy-duty Buffalo engine. She should make a good showing in the race with a rating of 33.

Taku II, a 50-footer, with a 40 h. p. San Francisco Standard engine, will be entered by her owner, Carl Lancaster, formerly of Ketchikan, now of Seattle, provided business does not keep him away.



Kipling with only 8 ft. of beam is extremely narrow for her length of 60 ft.

Dixon Entrance, will be the course elected by most of the boats. From Dixon Entrance through Revillagigado Channel is the shortest course to Ketchikan.

Those of the boats which are going farther north will proceed via Tongass Narrows and Clarence Strait around the east coast of Zarembo Island through the famous Wrangell Narrows, which are exceedingly difficult to navigate, into Frederick Sound, Stephens Passage and Gastineau Channel to Juneau and Douglas.

From this point it is a short and comparatively easy run up the Lynn Canal to Skagway Harbor at the very northernmost limit of the canal.

Concerning the difficulties of navigation, there is little for even the veriest amateur to fear, provided he has a good substantial boat equipped with a reliable engine and is disposed toward carefulness. Fog is frequent in July, August and September so that an adequate knowledge of how to steer a compass course is almost essential. Smoke at times adds a complication to navigation. Glacial ice and floating debris is apt to be found in sufficiently large pieces to be dangerous. A good stiff stem with an additional guard rail well down towards the water line are precautions well to take.

At Lund, Prince Rupert, Fort Simpson, Stewart, Ketchikan, Wrangell, Sitka, Douglas and Skagway will be found repair shops and gasoline. An effort will be made to have a supply of gasoline on hand at Ketchikan of sufficiently good quality and quantity to make the race, at the same price for which it could be obtained in the States. Hospitals are to be found at Van Anda, Alert Bay and Rock Bay, B. C., Ketchikan, Juneau and Sitka, Alaska.

Although the final details of the race have not been settled, the general conditions and restrictions are as follows:

The race from Ketchikan will be open to bona fide cruising power yachts from 40 to 60 feet water line length. These will be handicapped by the Pacific International Power Boat Association's measurement formula, which corresponds to the A. P. B. A. formula, with 80 per cent. allowance from their tables. This class is also restricted as to water line beam. If eight or more boats start under this classification the first three boats finishing will probably be awarded prizes. The committee has recommended that these prizes consist of trophies and cash. In addition the committee has recommended that a cash prize be awarded to the boat making the fastest time over the course, restricted to the same water line length as the regular class and coming within the limitations of the term "cruiser." In addition if any two or more boats of greater length desire to compete over the same course a trophy will be offered and a measurement handicap arranged for by the association. Sufficient fuel must be carried on board to cover the trip, in tanks properly piped. A small amount of



W. C. Stetson, now owned by Mr. John Arbuthnot, will probably compete in the Puget Sound event.

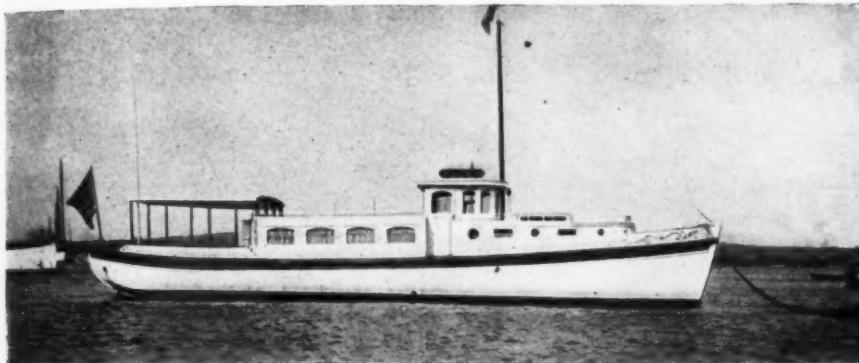
Laura H, a Whittlesey-Whitaker 50-footer, equipped with a 30 h. p. Union engine, was finished last year, but failed to enter any of the races. Her owner, O. B. Williams, has made a provisional entry in the Ketchikan race.

There are several other boats whose owners have expressed their intentions of competing, but descriptions of these are not available at this moment, nor is it possible to get a detailed report of the other probable Alaskan entries of which several are known to be contemplating entering.

One thing, however, is apparent and that is that there is no lack of interest either locally or throughout the motor boating world in this race, and if hard work can accomplish anything the Pacific International Power Boat Association intend to make this the most successful event of their history.

What the Marblehead race is to the Atlantic, the annual race of the Pacific International Power Boat Association on Puget Sound has come to be to the Pacific. Each year over a course of 225 to 250 miles the owners of fast power cruisers battle for supremacy. Although the starting and finishing points are changed each season, the distance and date remains about the same, usually coinciding with the annual regatta of the Northwest International Yacht Racing Association.

This year's race will start from Tacoma, right at the base of that magnificent mountain peak, which is the bone of contention between the cities of Seattle and Tacoma—the residents of the former calling it Mt. Rainier, while those of the



Gloria, recently lengthened to 45 ft. should make a good showing in the Alaska race.

latter insist on calling it Mt. Tacoma. Monte Carlo, Lake Lucerne or the St. Lawrence offer no more picturesque settings for a motor boat contest than the course of the third annual race of the P. I. P. B. A. July 2d is the date set.

From Tacoma the course lies along the shores of Vashon Island, down the Sound towards Pt. Townsend, across the Straits of Juan de Fuca, through the San Juan Islands to Vancouver, where a stake boat will be located. After reporting at this stakeboat the contestants may choose an optional course to Victoria finishing in front of the Victoria Yacht Club, which entertains from July 4th to 6th, the sailing and powerboat associations of the Northwest. The shortest possible course is 231 statute miles, but the optional clause permits of considerable latitude in choice and will develop an interesting test of each skipper's navigating ability and knowledge of local conditions.

It is really remarkable the growth along these lines since the long distance races of the P. I. P. B. A. were first inaugurated. In fact the whole Northwestern field of motor boating has received a wonderful stimulus in the last two years. Men who hardly saw a boat until the excitement of these or other contests got them going, have tumbled to the game like spaniels to water.

They made some funny mistakes during the first few years of the sport both in the building and handling of boats. Some awful and wonderful craft appeared at this time on the marine highways leading to and from Puget Sound. Gradually these have dissolved from view, although occasionally one comes across a type of construction unknown to the drafting room of the competent marine architect. It did not take long for owners to discover that these freaks were not only unfitted for the demands made upon them in the way of reliability and accommodation, but that these delinquencies were penalized by the association formula, when it came to racing them. Naturally, the measurement system of handicapping met with considerable opposition, although strange to say, its most strenuous antagonists, in building their next boats, turned out a type not only more wholesome but one which conformed pretty closely to the ideal which the association formula originally intended to develop.

The formula of the Pacific International Power Boat Association differs only slightly from that of the American Power Boat Association. Instead of placing an arbitrary restriction of beam to one-fifth of the water line length, the former

has developed a formula for the definite ratio of maximum waterline beam to water line length, as follows: $B = \frac{20L}{60+L}$ in which B is beam on water line and L is beam on loaded water line. It has been discovered that this does not materially affect the sea-going qualities of the smaller boats, while in the larger ones it presents a rather more shapely hull without serious damage to the matter of accommodations.

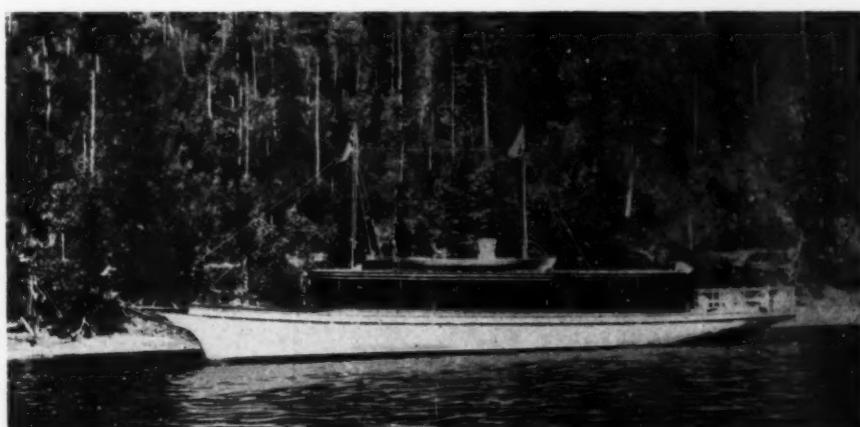
On this Tacoma-Victoria race, handicaps will be based on an allowance of 80% of the tables of the American Power Boat Association, it being found that in this particular locality this percentage more nearly equalizes conditions.

Another factor which the racing rules of the Pacific International Power Boat Association take into consideration is the matter of revolutions, the trial committee accepting nothing less than the manufacturer's rating and as much more as the official measurer can obtain from the boat on the trial run. With but a few exceptions this applied to the ordinary American Power Boat Association formula for obtaining horse power results in getting very close to the actual brake test.

In order to encourage the installation of twin engines—for in these waters it is desirable to have an extra engine on hand in case of an emergency—the committee have decided this year to deduct 10% of the total horse power in making up the with two engines. It will be found, in practice, that this will approximately represent the loss of efficiency in the wheels of a boat driven by two engines instead of a single engine totalling the same horse power.

A doubt still lingers in the minds of some Puget Sound owners as to the relative merits of the handicap and actual performance systems. For this reason both systems will be employed in conducting the Tacoma-Victoria race. A boat which can measure into the association restrictions may qualify for the actual performance prize by a preliminary trial run over the Government measured mile at Vashon Island. Those boats which are barred from the measurement prize, by the restrictions, may enter in the actual performance event by qualifying in the same way. The committee hopes by so doing to combine the excitement of a close actual performance finish with the well-known merits of the other system in encouraging the best type of boat.

Of course, no two men will ever agree upon the ideal type of boat. There are to be found in Puget Sound and the vicinity men whose opinion, backed by experience, attest the value of the narrower, deeper hull than that allowed by association formulae. One instance in particular comes to mind, viz:—Kipling, a boat 60 ft. over all by a trifle over 8 ft. beam, but with considerable draft. This boat, an illustration of which accompanies this article, has been used by her owner in all kinds of weather and sea and has taken large parties on cruises



Lady May, the trim cabin cruiser belonging to Dr. H. V. Wurdemann.

of considerable extent. With a new 60-horse power Holmes this boat should be very speedy. Her entry in either of the long distance events would afford an interesting opportunity to compare her behavior under similar conditions with boats that

conform to the measurement rule.

In the exposed waters of southeastern Alaska and British Columbia, notably in the neighborhood of Dixon Entrance and Queen Charlotte Sound, there is a considerable leaning toward the deep draft narrow type boat, whose underbody might be compared with that of the Ailsa Craig. These boats go *through* seas—instead of over them—in which the ordinary cruiser would be swamped, but as most of them are used for commercial purposes they lack the accommodations which are demanded in the modern cruiser. All of these facts are being studied by the local owners, and while it cannot be said that boats have been built expressly for these P. I. P. B. A. races, the knowledge gained through their running has been utilized.

To-day the man that buys a boat on Puget Sound can no longer be inveigled into buying something utterly unsuited to his uses nor does he construct a craft awful and wonderful to behold. He studies out the performances of the boats already built, thinks up ideas of his own, goes east if he can afford the time and money to compare the boats there with those in the West and finally employs a designer to embody his own ideas with the latest developments of the best type. If he cannot afford a designer, he usually picks up a second hand boat which has demonstrated its good qualities. The tendency in the right direction was evidenced this spring when practically every boat at the anchorage of the Seattle Yacht Club was for sale, not through lack of good qualities, but because each owner was desirous of building a bigger and better boat, in order to demonstrate the result of his study and deductions since breaking into the motor boating game.

One result accomplished by these races has been a more conscientious study of the rules of the road and navigation. Almost all of the cruisers belonging to the P. I. P. B. A. keep an accurate log of any extended cruise. Tides and currents are the objects of careful study. Prior to a race special trips are made to points on the coast, to familiarize the skipper with local conditions. Amateur captains, who a year ago scarcely knew which way to turn a wheel, now take advantage of back eddies, work the lead in cutting off corners on shoal points and run through fog by following the drift or sound waves. The formation of the voluntary naval militia to the amount of an auxiliary fleet of small power boats for scout and patrol duty in case of war is one development of the increased interest in motor boating upon Puget Sound.

Returning to the subject of the Tacoma-Victoria race, it may be said that greater interest prevails among the owners than ever before. To a preliminary postal card inquiry over thirty favorable responses were received. This included cruisers from 25 ft. to over 75 ft. water line and would seem to in-

regardless of class. Last year the race was won by the Soya, owned by R. H. Parsons, Ex-Admiral of the P. I. P. B. A., and captained by Edgar Ames of the Seattle Yacht Club.

The termination of the long distance race will mark the beginning of the season's regatta of the Northwestern Interna-



The 50-Footer *Laura H.* has been provisionally entered in the Alaska race.

tional Yacht Racing Association, which is entertained this year by the Victoria Yacht Club. The preliminary races will be given under the auspices of the Seattle Yacht Club, for all power boats which do not enter the long distance race. This race will be from Seattle to Victoria direct.

The five classes recognized by the Pacific International Power Boat Association are the following:—

Class A—Over 75 feet on the water line.

Class B—Over 60 feet, up to and including 75 feet.

Class C—Over 50 feet, up to and including 60 feet.

Class D—Over 40 feet, up to and including 50 feet.

Class E—Over 30 feet, up to and including 40 feet.

An attempt will be made this year to utilize both the measurement and the actual performance systems of handicapping in the same race, and each boat that is eligible under the measurement conditions is eligible to win both the measurement and actual performance prizes. The boats that are not eligible under the measurement conditions may race for the actual performance prize only.

A number of other interesting events will take place on the Pacific Coast within the next few months. The festival at Portland, Oregon, will be the occasion for a series of events, and on the 4th of July will be held a number of races at which time it is expected that the championship of the Pacific Coast for speed boats will be established. The principal event will be the ten meter race, and it is expected that Pacer II, of Portland, and Seattle Spirit, of Seattle, will present a very spectacular struggle for supremacy. It is rumored that Pacer II is somewhat faster than her predecessor, and the backers of Seattle Spirit claim that certain changes in her hull and a new engine have greatly increased her speed. The general invitation has been issued to all motor boat owners on the Pacific Coast to attend and participate in the 4th of July events at Portland. Every effort is being made to insure the proper facilities for the handling and transportation of boats to the river and to obtain government assistance in keeping the course clear for the racers.

The Astoria Motor Boat Club will supervise the annual regatta of that city to be held in August or September.

At San Francisco the Aeolian Yacht Club will hold a series of motor boat races on October 2d. The San Francisco Yacht Club is to conduct a similar event on the 9th of October, while the South Bay Yacht Club, of Alviso, Cal., will hold, on July 31st, a race meet for motor boats and a number of other activities later in the season. Among other events of the future are the regattas of Lake Whatcom Motor Boat Club, and of

the Coos Bay Motor Boat Club, both to be held on July 4th.

A great number of new boats have been built this spring up and down the coast. The interest and enthusiasm in motor boating is growing by leaps and bounds, and the season promises to far outshine that of last year.



Victoria Harbor, the finishing point of the Puget Sound Long Distance Race.

dicate that all five classes recognized by the association would have actual starters. A prize will be given to the boat finishing first in each class, under both the measurement and actual performance systems, and a special prize will go to the boat making the fastest time over the course and the one finishing first



Berneyo, winner of the Philadelphia to Havana long distance motor boat race, just after crossing the line at the start.

To Havana and Return.

Berneyo, Winner of the Race Down the Coast is Beaten by Caliph on the Return.
Accounts of Both Races, The Results and the Log of the Ilys.

By Chester L. Wynn.

Photographs by Levick.

THE longest motor boat race in history, the Havana race, has been run and the glory of outdistancing all previous contests must go to the two score daring sailors who sent the trim boats over the Gulf stream and on to the Cuban Isle. Berneyo was the dark horse, and the dark horse was returned the winner. It was a successful race from start to finish, marred only slightly by the disablement of Loantaka before she had gone beyond the Capes, but notable for the manner in which the little craft drove through the heavy head seas and winds which were practically continuous. The Havana race is assured of a repetition next year and most prob-

ably for years to come until some longer distance—no doubt across the Atlantic—far overshadows it in the eyes of the sport loving yachtsmen.

Six boats had been entered in the race, but only five nosed the line on May 21 off Race Street pier in the Delaware as Georgiana II had been withdrawn shortly before the start of the race. They were Commodore Whitaker's Ilys, a 50-footer equipped with a 25 horse power Hall motor; the 60-footer Caliph, owned by Martin E. Brigham, and equipped with a 36 horse power Hall; Mr. Frank Dennis's Caroline, 65 feet over all and powered with a 25 horse Standard; Loan-



Ilys was the winner of the return race from Bermuda last year.



Caroline, although a last year's boat, had never raced before.

taka, a 73-footer with a 70 horse power Reeves-Graef motor, owned by J. F. Peters, and Berneyo, Mr. Granberry's 60-footer with a 45 horse power Standard.

The week before the start had seen the Delaware alive with motor craft, helping and watching the entrants get into trim. The measuring of the boats to determine their rating and time allowance was done by Thomas D. Bowes and James M. Dodge, of Philadelphia; R. M. Haddock, of New Rochelle, and Charles D. Mower, of New York. Their work resulted in the following details:

Boat.	Rating.	Allowance.
Loantaka	47.82	Scratch
Caliph	44.34	7.50.03
Berneyo	42.78	11.35.07
Caroline	40.37	18.12.40
Ilys	40.08	19.03.07

The start was made in cloudy weather, and a few minutes after they had got under way the rain began to fall and continued throughout the day. As the boats ploughed down the Delaware they presented a most pleasing picture. Nobody was driven below decks by the downpour. It was easier to brave than the dense fog, which greeted them at the Delaware Breakwater, which marked the turning back of Loantaka.

There is little doubt but that Loantaka would have reached Havana if she had been given a thorough trial before starting her on the race. She has been criticised as a boat with an engine room too small for her engine. That is in the main correct, but the rub comes in that she was designed for a 25-horse power Standard motor and was eventually equipped with a 75 horse power Reeves-Graef, which took up decidedly more space. This, however, was not the real reason of her turning back. Just as had happened on one of her trial trips, she had become piston bound, and although the engineers spent hours filling her rings they could not get her into shape for a long sea voyage. The decision of her owner to drop out came after 27 long hours of tinkering with the engine. The summary of the finish of the race is as follows:

Boat	Finish	Elapsed			Corrected		
		Mean	Time	H. M. S.	Mean	Time	H. M. S.
Caliph	6.06 P. M., May 27	149	21	00	149	21	00
Berneyo	7.05 P. M., May 27	150	20	00	146	34	56
Ilys	10.36 A. M., May 28	165	51	00	154	37	56
Caroline	6.28 P. M., May 28	173	43	00	163	20	23



Caliph, winner of the return race from Key West to Atlantic City, as she appeared after making the run.

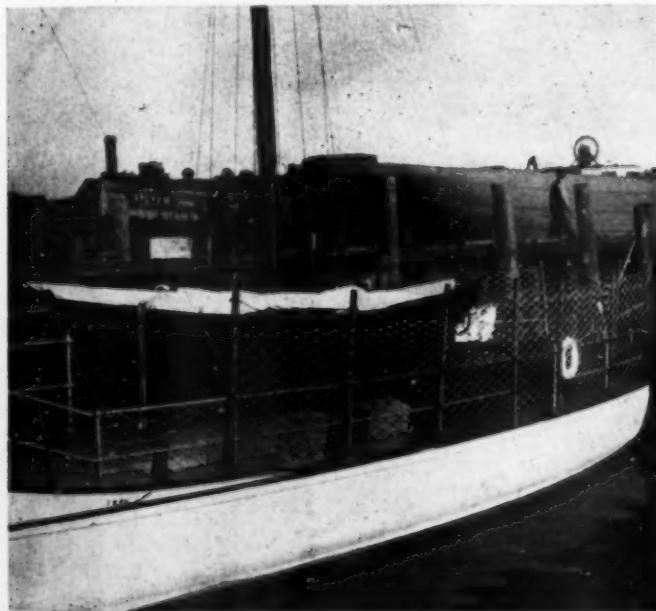
Few striking incidents mark the race between the other four boats. The navigators of Ilys, Caliph and Berneyo kept inside of the Gulf stream and encountered choppy seas and varying winds during the 7-day cruise. The Caliph, with Captain C. Loveland as her navigator, and P. P. G. Hall, who installed her 35-horsepower Hall, in charge of her engine-room, crossed the line in Havana Harbor first, but lost out to the Berneyo on the time allowance.

The Caroline, which was the only boat to set her course on the outside of the Gulf stream, had a head wind all the way down and was driven considerably off her course by the effect of the Gulf stream, as it swept to the north of the Bahama Bank and caught her on the bow.

Caliph, the entry of Vice-Commodore Martin E. Brigham, of the Ventnor Yacht Club, was officially declared the winner of the return race from Havana to Atlantic City, when she far outran the other three competitors, which had time allowances of from 4 to 12 hours as an advantage. She reached Atlantic City at 11.06 P. M. on June 9 after a driving race through turbulent seas for exactly 4 days, 14 hours and 30 minutes. S. W. Granberry's Berneyo, of the Brooklyn Yacht Club, which defeated the Caliph on time allowance on the Philadelphia to Havana race, crossed the line at 7.58.20 A. M. on June 10, and lost to Caliph by over 5 hours after her time allowance of 3 hours and 45 minutes had been deducted. Ilys finished at 1.26.45 P. M. on June 10 and took second place from the Berneyo because of the time allowance of 7 hours and 28 minutes given her. Caroline, the entry of M. F. Dennis, of the New York Yacht Club, broke her carburetor shortly after noon on the 10th and did not finish until 5.11.28 P. M., hopelessly out of the race.

The winning of the home race was a notable victory for Caliph, as she led the fleet from the beginning of the race, making about ten knots an hour against high seas and a stiff nor'easter during the last two days. The credit is given to Captain S. Crowley Loveland, her navigator, who used the greatest skill, both in driving his staunch little craft through fair and bad weather and in selecting the exact course that would give him the advantage of both wind and currents. Owner Brigham was generous in his praise of Captain Loveland and of the crew, and described the manner in which the Caliph outdistanced the other boats as follows:

"We left Havana about 4.45 o'clock on Saturday afternoon,



Caliph carried two Banks dories nested one within the other.



Berneyo's crew casting off just before the start of the race.

Photographic Reproduction of the Log of Ilys

Log of the "Algo"		Date		Time		Dist.		Wind		Sea		Remarks	
Month	Day	Year	Year	Month	Day	Lat.	Long.	Dir.	Force	State	Condition	Remarks	Log of the "Algo"
1	27	1905	0	South	South							In the afternoon the weather cleared and we remained	10-10
2	28	1905	0	SW	SW								
3	29	1905	0	SW	SW								
4	30	1905	0	SW	SW								
5	31	1905	0	SW	SW								
6	1	1906	0	SW	SW								
7	2	1906	0	SW	SW								
8	3	1906	0	SW	SW								
9	4	1906	0	SW	SW								
10	5	1906	0	SW	SW								
11	6	1906	0	SW	SW								
12	7	1906	0	SW	SW								
1	8	1906	0	SW	SW								
2	9	1906	0	SW	SW								
3	10	1906	0	SW	SW								
4	11	1906	0	SW	SW								
5	12	1906	0	SW	SW								
6	13	1906	0	SW	SW								
7	14	1906	0	SW	SW								
8	15	1906	0	SW	SW								
9	16	1906	0	SW	SW								
10	17	1906	0	SW	SW								
11	18	1906	0	SW	SW								
12	19	1906	0	SW	SW								
1	20	1906	0	SW	SW								
2	21	1906	0	SW	SW								
3	22	1906	0	SW	SW								
4	23	1906	0	SW	SW								
5	24	1906	0	SW	SW								
6	25	1906	0	SW	SW								
7	26	1906	0	SW	SW								
8	27	1906	0	SW	SW								
9	28	1906	0	SW	SW								
10	29	1906	0	SW	SW								
11	30	1906	0	SW	SW								
12	1	1907	0	SW	SW								
1	2	1907	0	SW	SW								
2	3	1907	0	SW	SW								
3	4	1907	0	SW	SW								
4	5	1907	0	SW	SW								
5	6	1907	0	SW	SW								
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7	8	1907	0	SW	SW								
8	9	1907	0	SW	SW								
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12	13	1907	0	SW	SW								
1	14	1907	0	SW	SW								
2	15	1907	0	SW	SW								
3	16	1907	0	SW	SW								
4	17	1907	0	SW	SW								
5	18	1907	0	SW	SW								
6	19	1907	0	SW	SW								
7	20	1907	0	SW	SW								
8	21	1907	0	SW	SW								
9	22	1907	0	SW	SW								
10	23	1907	0	SW	SW								
11	24	1907	0	SW	SW								
12	25	1907	0	SW	SW								
1	26	1907	0	SW	SW								
2	27	1907	0	SW	SW								
3	28	1907	0	SW	SW								
4	29	1907	0	SW	SW								
5	30	1907	0	SW	SW								
6	1	1908	0	SW	SW								
7	2	1908	0	SW	SW								
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11	30	1908	0	SW	SW								
12	1	1909	0	SW	SW								
1	2	1909	0	SW	SW								
2	3	1909	0	SW	SW								
3	4	1909	0	SW	SW								
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5	18	1909	0	SW	SW								
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5	12	1910	0	SW	SW								
6	13	1910	0	SW	SW								
7	14	1910	0	SW	SW								
8	15	1910	0	SW	SW								
9	16	1910	0	SW	SW								
10	17	1910	0	SW	SW								
11	18	1910	0	SW	SW								
12	19	1910	0	SW	SW								
1	20	1910	0	SW	SW		</						

in company with the other contestants, Berneyo, Caroline and Ilys. A large yacht, in charge of Commodore Carbonell, of the Havana Yacht Club, started out before us for the purpose of acting as stake boat at Key West, but the Caliph soon overtook her and was first to reach the entrance of that harbor. Consequently we acted as stake boat for the other boats.

"We made the run from Havana to Key West by 2 o'clock on Sunday morning. The Berneyo kept us in sight during this run, but we gained 35 minutes on her. From Key West the fleet started north about 4:45 o'clock in the afternoon and...

o'clock in the afternoon, and again the Caliph gradually drew away from the Berneyo, her nearest competitor, until we sighted her for the last time off the Florida coast on Monday morning about 8 miles astern. The next two days were without special incidents until we encoun-

tered a strong westerly wind late Wednesday afternoon off Cape Lookout. We had been following the Gulf stream until this time, but it soon became evident that we would have to get out of it, for a strong wind beating against the current kicks up a sea that will make trouble for the largest steamer. We worked our way out of the stream until we

Caroline in racing trim.

(Continued on
page 50.)

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Ilys bucking the Gulf Stream.



were close in shore. Here the water was rough but nothing like that further out to sea."

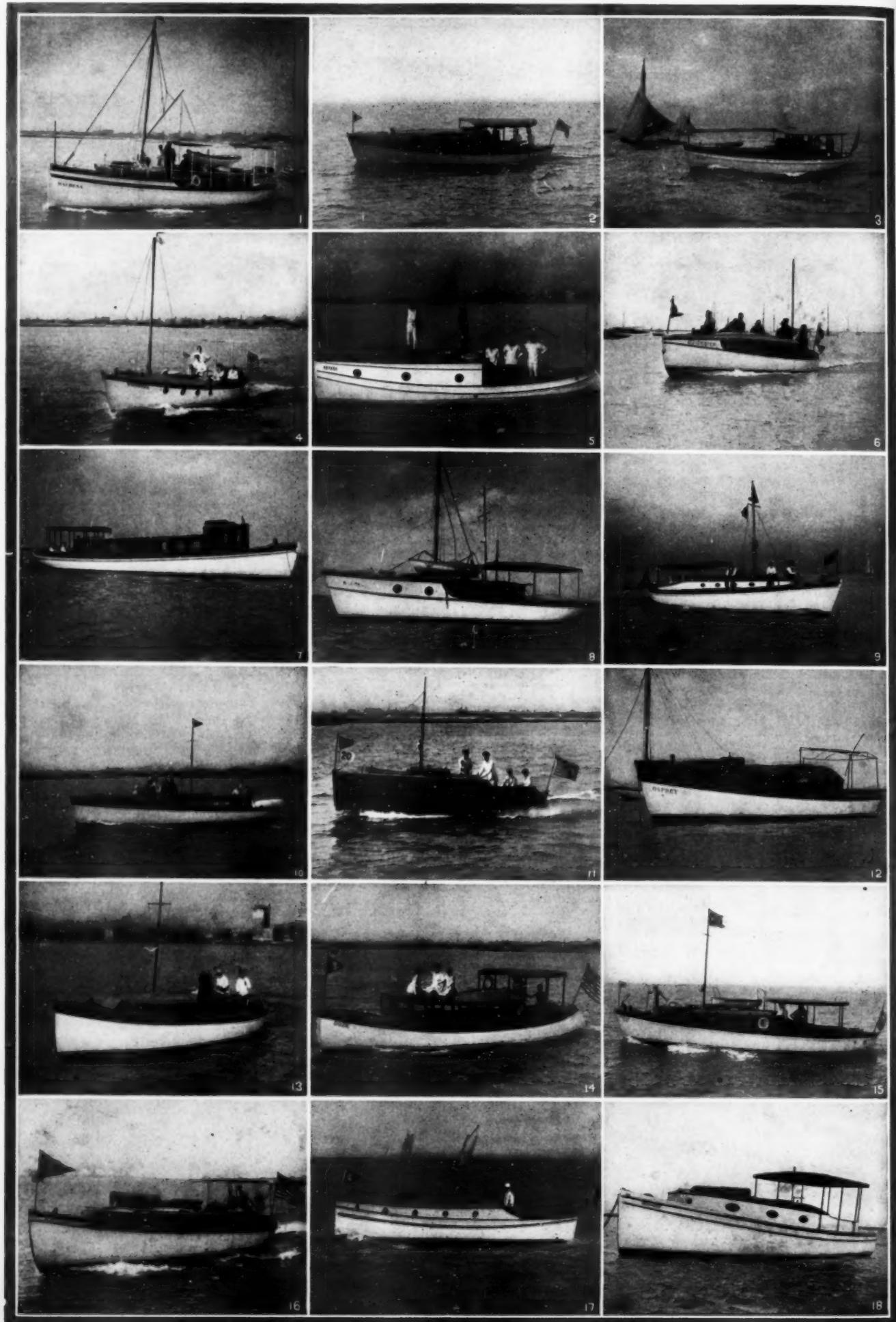
Concerning the outgoing race, which he nearly won, Mr. Brigham said:

"We were pulling away from the rest of the fleet at the start when in passing League Island only a few miles from the starting line, we picked up a log or something with our propeller which impeded our progress for some days. We had the Caliph dry-docked at Havana and found that the propeller had been bent out of shape and that a deep gash had been torn in the stern of the boat near the shaft guide

That undoubtedly
made a grand finish.

The return race on the seashore resort.

the seashore resort at the gale and rain-



This year's Chicago-Michigan City Race was the fifth annual event of the Columbia Yacht Club. Some of the boats that competed.
 1—Waubessa, 42 ft., Thomas L. Gilman; 2—Sylvia, 34 ft., Messrs. Repp & Avery; 3—Uandi, 32 ft., Charles S. Bliss; 4—Winnetka, 32 ft., Ayers Boal; 5—Nayade, C. B. Duryee; 6—Quickstep, 30 ft., J. W. McLaughlin; 7—Averas, 30 ft., John A. Boland; 8—Gloria, 36 ft., Robert B. Doran; 9—Wanderer, 50 ft., Geo. J. Bliss; 10—Florence, 50 ft., W. H. Sampson; 11—Bub, 26 ft., MacLeod & Clumb; 12—Osprey, 30 ft., E. A. Rich; 13—Twister, 30 ft., Geo. Spinks; 14—Dose, A. H. Vorm; 15—Swastika, 42 ft., F. H. Noble; 16—Arapahoe, 30 ft., Davis Syndicate; 17—Lila, B., 30 ft., W. F. Bates; 18—Wee Wee, 25 ft., Dr. Greer.

The New Motor Boat Law.

Passed by Both Houses of Congress and Signed by the President, it Goes Into Effect July 9th.
Of Vital Interest to All Motor Boat Enthusiasts Throughout the Country.

ON June 9th, President Taft signed the motor boat bill which had been in the hands of Congress for some time past, thus making it law on and after July 9th, 1910. As the bill was finally passed and signed so near the closing date for this issue of *Motor Boating*, we have space only for the complete law which will be in force after July 9th, and for the regulations which have been drawn up for its enforcement. The law and regulations follow:

AN ACT TO AMEND LAWS FOR PREVENTING COLLISIONS OF VESSELS AND TO REGULATE EQUIPMENT OF CERTAIN MOTOR BOATS ON THE NAVIGABLE WATERS OF THE UNITED STATES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the words "motor boat" where used in this Act shall include every vessel propelled by machinery and not more than sixty-five feet in length except tug boats and tow boats propelled by steam. The length shall be measured from end to end over the deck, excluding sheer: *Provided*, That the engine, boiler, or other operating machinery shall be subject to inspection by the local inspectors of steam vessels, and to their approval of the design thereof, on all said motor boats, which are more than forty feet in length, and which are propelled by machinery driven by steam.

Sec. 2. That motor boats subject to the provisions of this Act shall be divided into classes as follows:

Class one. Less than twenty-six feet in length.

Class two. Twenty-six feet or over and less than forty feet in length.

Class three. Forty feet or over and not more than sixty-five feet in length.

Sec. 3. That every motor boat in all weathers from sunset to sunrise shall carry the following lights, and during such time no other lights which may be mistaken for those prescribed shall be exhibited.

(a) Every motor boat of class one shall carry the following lights:

First. A white light aft to show all around the horizon.

Second. A combined lantern in the fore part of the vessel and lower than the white light aft showing green to starboard and red to port, so fixed as to throw the light from right ahead to two points abaft the beam on their respective sides.

(b) Every motor boat of classes two and three shall carry the following lights:

First. A bright white light in the fore part of the vessel as near the stem as practicable, so constructed as to show an unbroken light over an arc of the horizon of twenty points of the compass, so fixed as to throw the light ten points on each side of the vessel, namely, from right ahead to two points abaft the beam on either side. The glass or lens shall be of not less than the following dimensions:

Class two. Nineteen square inches.

Class three. Thirty-one square inches.

Second. A white light aft to show all around the horizon.

Third. On the starboard side a green light so constructed as to show an unbroken light over an arc of the horizon of ten points of the compass, so fixed as to throw the light from right ahead to two points abaft the beam on the starboard side. On the port side a red light so constructed as to show an unbroken light over an arc of the horizon of ten points of the compass, so fixed as to throw the light from right ahead to two points abaft the beam on the port side. The glasses or

lenses in the said side lights shall be of not less than the following dimensions on motor boats of—

Class two. Sixteen square inches.

Class three. Twenty-five square inches.

On and after July first, nineteen hundred and eleven, all glasses or lenses prescribed by paragraph (b) of section three shall be fresnel or fluted. The said lights shall be fitted with inboard screens of sufficient height and so set as to prevent these lights from being seen across the bow and shall be of not less than the following dimensions on motor boats of—

Class two. Eighteen inches long.

Class three. Twenty-four inches long:

Provided, That motor boats as defined in this Act, when propelled by sail and machinery or under sail alone, shall carry the colored lights suitably screened but not the white lights prescribed by this section.

Sec. 4. (a) Every motor boat under the provisions of this Act shall be provided with a whistle or other sound-producing mechanical appliance capable of producing a blast of two seconds or more in duration, and in the case of such boats so provided a blast of at least two seconds shall be deemed a prolonged blast within the meaning of the law.

(b) Every motor boat of class two or three shall carry an efficient fog horn.

(c) Every motor boat of class two or three shall be provided with an efficient bell, which shall be not less than eight inches across the mouth on board of vessels of class three.

Sec. 5. That every motor boat subject to any of the provisions of this Act, and also all vessels propelled by machinery other than by steam more than sixty-five feet in length, shall carry either life-preservers, or life belts, or buoyant cushions, or ring buoys or other device, to be prescribed by the Secretary of Commerce and Labor, sufficient to sustain afloat every person on board and so placed as to be readily accessible. All motor boats carrying passengers for hire shall carry one life-preserver of the sort prescribed by the regulations of the board of supervising inspectors for every passenger carried, and no such boat while so carrying passengers for hire shall be operated or navigated except in charge of a person duly licensed for such service by the local board of inspectors. No examination shall be required as the condition of obtaining such a license, and any such license shall be revoked or suspended by the local board of inspectors for misconduct, gross negligence, recklessness in navigation, intemperance, or violation of law on the part of the holder, and if revoked, the person holding such license shall be incapable of obtaining another such license for one year from the date of revocation: *Provided*, That motor boats shall not be required to carry licensed officers except as required in this Act.

Sec. 6. That every motor boat and also every vessel propelled by machinery other than by steam, more than sixty-five feet in length, shall carry for immediate use the means of promptly and effectually extinguishing burning gasoline.

Sec. 7. That a fine not exceeding one hundred dollars may be imposed for any violation of this Act. The motor boat shall be liable for the said penalty and may be seized and proceeded against, by way of libel, in the district court of the United States for any district within which such vessel may be found.

Sec. 8. That the Secretary of Commerce and Labor shall make such regulations as may be necessary to secure the proper execution of this Act by collectors of customs and other officers of the Government. And the Secretary of the Department of Commerce and Labor, may upon application therefor, remit or mitigate any fine, penalty, or forfeiture

relating to motor boats except for failure to observe the provision of section six of this Act.

Sec. 9. That all laws and parts of laws only in so far as they are in conflict herewith are hereby repealed: *Provided*, That nothing in this Act shall be deemed to alter or amend acts of Congress embodying or revising international rules for preventing collisions at sea.

Sec. 10. That this Act shall take effect on and after thirty days after its approval.

REGULATIONS.

LIGHTS.

1. The lights provided for in section 3 of the act above are *running lights* for motor boats subject to the provisions of the act in lieu of the lights prescribed, relatively, by article 2 of the act approved June 7, 1897, entitled "An act to adopt regulations for preventing collisions upon certain harbors, rivers, and inland waters of the United States;" rule 3 of the act approved February 8, 1895, entitled "An act to regulate navigation on the Great Lakes and their connecting and tributary waters;" and rules 3, 5, 6, and 7 of section 4233 of the Revised Statutes, governing western rivers. The penalty for failure to carry such lights is a fine not exceeding \$100.

2. The lights provided for in section 3 are not in conflict with the anchor lights, lights for pilot and fishing vessels, and other lights provided in the acts above cited. Thus, the anchor light for motor boats on inland waters will remain as prescribed in article 11 of the act of June 7, 1897, as follows:

Art. 11. A vessel under one hundred and fifty feet in length when at anchor shall carry forward, where it can best be seen, but at a height not exceeding twenty feet above the hull, a white light, in a lantern so constructed as to show a clear, uniform, and unbroken light visible all around the horizon at a distance of at least one mile.

Collectors of customs and others will observe that the penalties for violation of existing laws not in conflict with this act remain unchanged.

3. Where lights are carried on motor boats in accord with existing law in excess of the requirements of the act of June 9, 1910, collectors of customs and other officers for the present need not report such lights as violations in order to allow time for the transition to the new lights.

WHISTLE, FOG HORN AND BELL.

4. No size or style of whistle, fog horn, or bell (except for class 3) is prescribed, provided it is available and sufficient for the use for which it is intended. The word "efficient" must be taken in its ordinary sense, considered with reference to the object intended by the provisions in which the word appears, namely, the production of certain signals.

LIFE-PRESERVERS, ETC.

5. Samples of devices, as substitutes for life-preservers, life belts, buoyant cushions, or ring buoys, to be prescribed by the Secretary of Commerce and Labor, must first be submitted to the nearest board of local inspectors for transmission to the Supervising Inspector-General, Steamboat-Inspection Service, for examination and approval.

FIRE-EXTINGUISHING APPARATUS.

6. No specific means of promptly and effectually extinguishing burning gasoline are (Continued on page 50.)

The Big Motor Boat Meet at Peoria.

The Fourth Annual Regatta of the Mississippi Valley Power Boat Association.
To be Held Under the Auspices of the Illinois Valley Yacht Club.

By A. T. Griffith.

WHAT promises to be the greatest and most varied collection of fast displacement boats ever assembled in this country will come together on Peoria Lake when the fourth annual regatta of the Mississippi Valley Power Boat Association opens on July 4th to continue through the 5th and 6th, under the auspices of the Illinois Valley Yacht Club of Peoria, Ill.

Thirty racing boats, ranging from forty feet over all down to 20-footers, have already entered for these races, with the prospect that this list will be doubled before the evening of July 3d. The fleet already signed, carry power plants which range from 30 to 300 horsepower, but while there are efforts being made to enter one steam turbine forty-footer, there is not a single freak boat, or hydroplane, among the list and none have been offered.

The forty-foot class, for which a cash purse of \$1,000 and the \$1,000 M. V. P. B. A. trophy cup are offered, has attracted the most attention and unquestionably will produce a race the like of which has never been seen in this country. In order to gain some idea of how evenly matched some of these high powered forty-footers will be, a few unofficial figures must be digested and the past performances of some of these boats considered. Briefly, the forty-footers now in sight to face the starter on July 5 are:

The new Hoosier Boy II, owned by J. W. Whitlock, Rising Sun, Ind. This boat carries 200 horsepower. Hoosier Boy defeated everything west of the Allegheny Mountains last

summer and secured marks of better than 30 miles per hour in actual contest. Hoosier at that time carried but 75 horsepower.

Red Top III, owned by W. E. Hughey, of Bellevue, Iowa, carries motors calculated to develop 240 horsepower. She won the free-for-all at St. Charles, Mo., last October, defeating Mascot and Independence II. Her hull has been rebuilt since then. At that time she claimed the forty-foot championship of the Mississippi River. Owner claims better than thirty miles an hour.

Independence III, owned by Ed C. Keonig, of St. Louis, Mo., carries Jencick power plant calculated to develop 300 horsepower. Was leading field of 40-footers when disabled for the Western Championship in Peoria last August. Lost by narrow margin to Red Top, St. Charles, Mo., in October. Her hull has been remodeled and motors reborbed since that time.

Minne C. III, owned by Ernst Corsepius, of Fort Madison, Iowa, carries a 12-cylinder Roberts power plant, rated at 240 horsepower and was built to defend the Western Rivers Championship held by her owner in 1908. She was unable to start last season. Her hull has been remodeled this spring.

Courier II, owned by W. J. Connors, of Buffalo, N. Y., untried, designed by Truitt and Stillman to replace hull which raced at Palm Beach, Fla., in March, carries a 280 h.p. power plant.

Oshkosh, owned by Fred T. Athearns, Oshkosh, carries specially designed aluminum base

motors rated at 200 h.p., outfit untried in race.

Marguerite, owned by D. W. Voorhees, of Peoria, Ill., carries a 100 h.p. plant. Her hull designed to defeat Hoosier Boy II, is credited with 33 miles down stream in 59 minutes.

Coyote, owned by Fred S. Smith, Terre Haute, Ind., won the Indian River, Mich., Championship last fall. She has an 8-cylinder plant and is credited with a 30-mile gait.

An un-named model, designed and owned by A. G. Cuthbert, of Chicago, power plant unknown.

Catherine, owned by C. S. Arvidison, Chicago, power plant unknown, boat untried.

Other forty-footers are expected to enter, but the forty-footers will not have it all their own way in this free-for-all, for any boat under that length, over all measurement, is eligible to start, and the owners of all promising 32, 26 and even 20-footers are signing up for a joust with the big fellows. Strangely enough there have been two or three twenty-foot models designed which bid fair to compete on almost even terms with these big boats. For instance there is Pronto II, owned by Smith and Thede, of Peoria. This little boat carries a six-cylinder, two-cycle motor, designed to develop 60 h.p. In a brush with the Marguerite on Memorial Day this boat was holding its own against the 100 h.p., forty-footer until overcome by unusually rough seas and heavy wind. Like Mascot of last season, which boat defeated everything in the west under 40 feet, she rides well up out of the

(Continued on page 64.)

The Prize Contest in Questions and Answers

ON pages 15, 16, 17, 18 and 19 appear the answers to the questions which were printed in the May issue of *MOTOR BOATING*. The construction of a covering for an open boat which must be left at a mooring, the best method of removing and replacing piston rings and the treatment of a boat's bottom to increase its speed are all considered and thoroughly discussed. It is everybody's contest, subscriber and non-subscriber alike. Come in.

IN regard to the prizes: As there has been some difficulty in determining what a number of the prize winners would like as prizes, resulting in unnecessary labor and delay, we must insist that each contestant when he sends in his answer state definitely what he would like in the event of his winning a prize. And we must insist also that he select some one thing whose advertised price is either \$5.00 or \$25.00 and not a collection of different articles whose combined prices are equal to the above figures, excepting, of course, those articles which may be had in quantities of a dozen, half dozen, etc., such as spark plugs, dry cells and the like.

READ the general conditions again: We will give prizes to those who send in the best answers to the questions printed herein each month, and in order that the contest may be helpful to the greatest possible extent, we will give prizes for the best and most practical questions submitted for the next following competition. There will be three questions in the contest each month, and therefore three prizes for the answers.

THE QUESTIONS FOR THE SEPTEMBER CONTEST ARE THESE:

Give description and working drawings for the construction of a water-tight skylight suitable for the small cruiser.

Suggested by Wm. Henry Harrington, Hartford, Conn.

What is the best method of separating shaft couplings, pipe fittings, etc., that have stuck together.

Suggested by H. E. Cunningham, Burlington, Vt.

What is the best method of overcoming the short circuiting of high tension wires by moisture and spray in jump spark ignition system.

Suggested by H. C. Thomson, Canton, Mass.

Answers to these questions, addressed to the Editor of *MOTOR BOATING*, 1789 Broadway, New York, must be:

(a) In our hands on or before July 25th, (b) not over 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired).

Questions for the next contest should reach us on or before the 25th of July.

THE PRIZES ARE:

For each of the best answers to the questions above, any article advertised in *MOTOR BOATING*, of which the advertised price does not exceed \$25, or a credit of \$25 on any article advertised in *MOTOR BOATING*, which sells for more than that amount.

(There are three prizes, one for each question, and a contestant need send in an answer to but one, if he does not care to answer all.)

For each of the questions selected for use in the next contest, any article advertised in *MOTOR BOATING*, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in *MOTOR BOATING*, which sells for more than that amount.

For all non-prize-winning answers published we will pay space rates.

When you send in your answer state what you will take if you win the prize.

Making a Cover For the Open Boat.

How to Protect the Open Motor Boat Which Must Be Left Exposed at a Mooring.
Practical Designs for a Number of Covers and Instructions for Building.

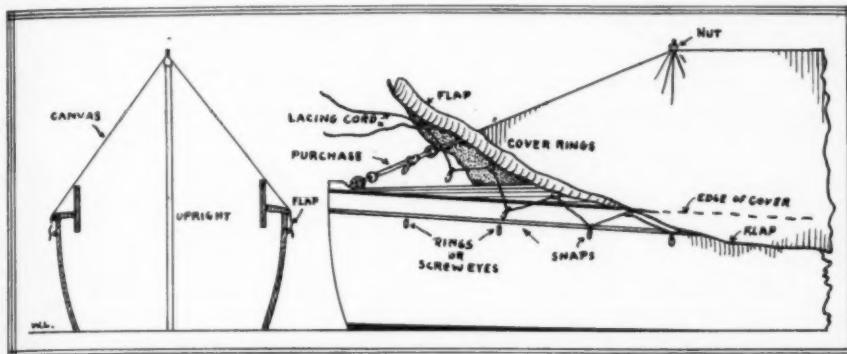
THE PRIZE CONTEST—Answers to the First Question in the May Issue.

Covers Entire Boat.

(The Prize-Winning Answer.)

THE purpose of this article is to show how the time-tried tent principle has successfully been adapted to solve the mooring cover problem. The framework consists of $2\frac{1}{4}$ in. galvanized pipe uprights, which butt into flush plates, sunk into the cockpit flooring and extend 18 to 24 in. above the

proper angle and a nail should then be driven into the free end of the piece, leaving about $\frac{1}{4}$ in. protruding after the head is filed off. A small hole is drilled in the coaming to receive the nail, similarly a nail is driven into each free end of the ridge pole, so as to project $\frac{1}{4}$ in. on the underside and fit into a small hole in the top of the coaming. If the pilot wheel projects above the top of the coaming a triangular piece as shown in Fig. 4 may be con-



The design described by "E. D." protects both deck and cockpit.

coaming. They are capped with shouldered tips which slip into thimbles spliced into a $\frac{3}{8}$ in. manila rope ridge at intervals corresponding with the location of the uprights. Each end of the ridge is fitted with a purchase, consisting of a leather strap, looped to a harness snap, which hooks into a ring screwed into the deck forward and aft. The proper tension is obtained by tightening the strap.

The cover proper is made of 8 or 10 ounce canvas and need not be of strictly waterproof material. It stretches over the ridge rope to which it is permanently sewed and slopes down to the gunwales. One-half in. galvanized rings are sewed at 2 ft. intervals along the edge of the cover and a $\frac{1}{4}$ in. cord long enough to go completely around the boat and leave a few feet to spare is run through these. Between each ring a small snap is slipped on to the cord and these in turn hook into rings fastened to the hull at corresponding intervals. After every snap is hooked to its corresponding ring, the cover is tightened to an absolutely perfect fit by pulling on the two ends of the cord, which are then tied together. No matter how wet or dry the cover the snaps handle with perfect freedom. The customary flap is provided which extends 5 or 6 in. below the fastening.

The steep sides cannot retain any water, and covers made of plain duck as light as 6 ounces have been found practical. The shape offers but little resistance to the wind, and when not in use it is easily stowed in a locker.

E. D., Park Laval, Quebec.

Easily Constructed.

THE most convenient and economical covering for an open boat I have ever seen is the one described below.

The frame is made of wooden strips $1\frac{1}{4}$ in. vertically by $\frac{3}{4}$ in. horizontally. The ridge pole is of two pieces hinged together with the hinge underneath. To give proper drainage the middle of the ridge pole is 8 in. above the level of the coaming. Two strips of $1\frac{1}{4}$ by $\frac{3}{4}$ in. stock should be cut, making the angles at the ends such that they will be flat against the coaming and ridge pole when in place. These two side pieces should be hinged to one end of one of the parts of the ridge pole at the

structured to fit over the coaming for the ridge pole to rest upon, and in case the engine projects above the line of the coaming a similar piece may be constructed for the rear.

Now for the canvas. At every foot along the ridge pole, measure the distance from the top of the coaming and lay these distances off on the canvas, laid out flat, adding 4 in. Draw a curve through these points, cut along the curve and sew a 2 in. hem all around. Cut $\frac{3}{8}$ in. holes in the middle of the hem every foot and in these put $\frac{3}{8}$ in. brass grommets, using a flatiron and small ball-peen hammer. Stretch the canvas into place and put a round headed screw into the coaming through each grommet.

This cover is very quickly and easily put in place and can be stowed away in a locker when not in use. By having a removable pin in the middle hinge either end of the boat may be covered by using the half of the ridge pole to which the side pieces are fastened and rolling up the other end of the canvas.

G. ALLAN KING, Worcester, Mass.

Cover and Spray-Hood.

THE canvas cover and spray hood described below I believe from experience to be the simplest and most practical for the purpose. It is used on an 18 ft. x 4 ft. boat, the cockpit of which is 11 ft. long. The hood covers the cockpit and motor to within 3 ft. of the stern, leaving room for two occupants at this point. A flap covers this open space when at the mooring and also protects occupants from flying spray when running. Two people can get into the boat and start off without removing the cover, as there is room enough to get under and start the engine. Both cover and framework are easily taken down and stowed when desired. I have used this arrangement in some extremely rough weather on San Francisco Bay and the boat has lain at her mooring to all the winter rains, and in all cases the engine has been kept absolutely dry. The framework is very simple. An iron or brass pipe or rod frame extends across the cockpit a few feet forward of the after end. This fits into sockets on the outside of the coaming and may be made either V-shaped or semi-circular and jointed in the

middle. The sockets should be long enough to allow the frame to stand vertically and be stiff. The joint may be made by slipping the ends into a short length or larger pipe. The iron pipe or rod should be $\frac{1}{2}$ in. in diameter and may be made any height desired. A low hood does not catch the wind and does not obstruct the view of the occupants in the stern. The other part of the frame is a longitudinal ridge pole, in my case made of one of a pair of jointed oars that I carry. This rests on the coaming at the forward end and on the iron frame aft. Cut the canvas to fit around the coaming and button down tightly around the sides and forward end. This holds the pole securely in place, but it can easily be removed.

These sectional oars are cheap, easily stowed and reasonably strong and if not long enough for this framework insert a wooden section in the middle. Using an oar saves the presence of an extra article in the boat. When leaving the boat at the mooring, button down the flap around the after end of the cockpit. The canvas, if heavy, need not be waterproof, but should be shrunk before cutting.

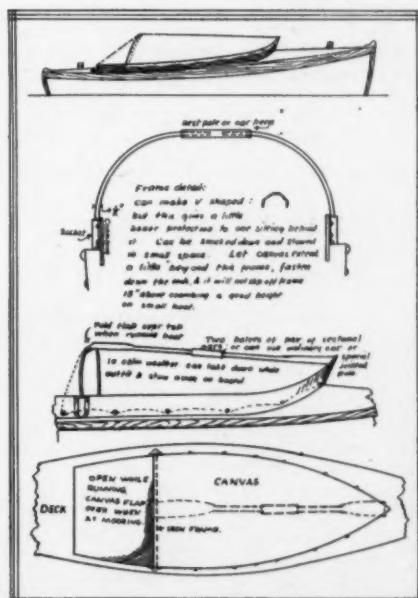
H. H. PARKER, Oakland, Calif.

Many Good Features.

THE ideal covering for an open boat should be

1. A top on which you will not bump your head in boarding or have to crawl out of in disembarking.
2. One that you won't have to waste a lot of time on after the day's run.
3. One that will be rain-tight and which may be used as a protection from the sun.
4. And one that will not give the boat undue top-hammer.

The covering which I have designed meets all these needs and is easily constructed at but



Mr. Parker's cover and spray hood.

slight outlay. The top consists of 8 ounce waterproof duck run over $\frac{3}{8}$ in. galvanized iron or brass pipe by a number of brass rings, sewed through reinforcements in the duck. The pipe stanchions are not bent to the conventional spray-hood curve, but are run up vertically and then curved gracefully, giving

more room inside. For 10 ft. of length don't go higher than 2 ft. 10 in. above the top of the coaming.

To bend the pipe lay off the curve on the floor and nail several cleats along the inside of the arc, then bend the pipe slowly against these. Insert the ends of the pipe into hood sockets screwed to the outside of the coaming. Brass rings to run over the pipes should be sewed about 6 in. apart.

Stamp grommets 12 in. apart along the lower edge of the duck and fasten to the coaming with hood hooks. The end pieces should be cut to lap over and fastened to the sides and a celluloid window may be sewed into the forward end if desired.

In breezy weather the side may be rolled up, lashed to the top of the stanchions; in hot weather it may be used as a canopy top, and in foul weather one of the end pieces may be used as a windshield and the sides may be brought down, completely enclosing the cockpit with the exception of the after end. When leaving the boat for the night it is but a moment's work to make everything snug.

ARTHUR C. MACK, Edgewater, N. J.

Battens in Seams.

THE principal trouble with a boat cover is stowing it when not in use and when in use to keep it up so that water will drain off and not settle into pockets. The cover here described when not in use may be folded, one side over the other and then rolled up to stow in the locker.

The cover for boats of 24 to 30 feet over all should be of No. 7 cotton canvas and 10 ounce for smaller boats. The cloth should run aforwards and the seams should have sufficient lap to allow for the insertion of oak battens $1\frac{1}{4}$ inch wide by $\frac{3}{4}$ inch thick, the edges of which are to be thinned and rounded to an oval section.

The canvas is to be secured along the ridge to a Manila rope $\frac{1}{2}$ inch in diameter, the forward end of which is to have a snap hook spliced into it, so as to hook into an eye on the forward deck. The after end of the rope is to have a turnbuckle spliced to it, so that the slack may be taken up. The rope before being secured to the canvas should be rove through two eye bolts which can be secured in the proper position for insertion into sockets at the forward and after ends of the cockpit.

The battens are to extend from the ridge rope far enough to extend a little ways over the gunwale or coaming.

A flap or curtain should be secured to the edge of the canvas of sufficient depth to drop well below the gunwale and should have grom-

through the eyes when the canvas is in place.

The operation is as follows: Snap the hook into the forward eye and stretch the rope over the bolts, securing it at the after eye and making it taut with the turnbuckle. Then bring the canvas over the eyes along the sides and insert the pins.

ARTHUR B. CASSIDY, Wollaston, Mass.

Easiest to Construct.

ON my last two boats I have used a covering construction as follows:

About 2 in. from the coaming and spaced about 8 in. apart screw brass eyelets into the deck, using two placed at right angles and close together at the corners of square turns. The canvas (10 ounce) should be trimmed to conform to the coaming line, but should be 18 in. or 2 ft. larger both ways. Now overcast the edges to prevent fraying. Cover the cockpit with the canvas and after evening up fasten temporarily with tacks. Mark the positions of the screw-eyes and then offset these marks 2 in. toward the edge of the canvas to allow for shrinkage and for the

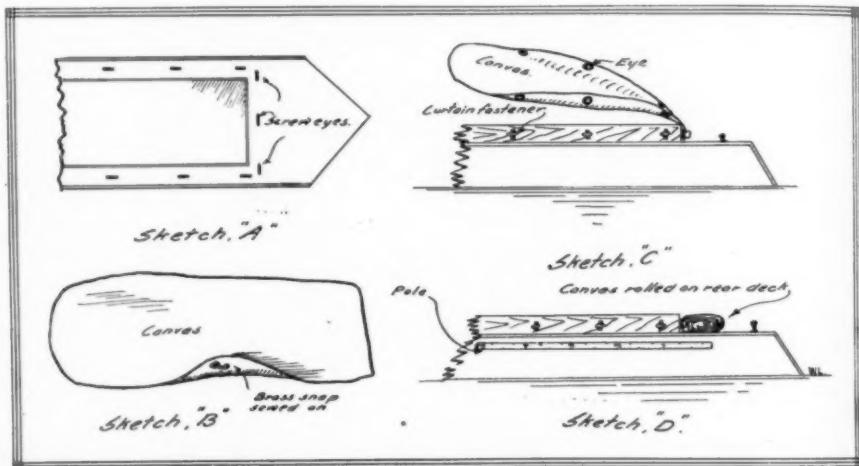
to the rear deck and the pole may be hung outside the coaming and used as a boat hook or sounding rod.

W. M. ELLIS, Ellis, Ohio.

A Simple Device.

AN open boat has or should have row locks set either on the coaming or gunwale. If your boat is not so equipped, set a pair about amidships. Bend a length of galvanized or brass pipe (if a brass it should be of heavy gauge) to form a hook, which when the ends of the pipe are inserted in the row lock sockets will leave room to pass comfortably under. The cover should then be made in two sections of canvas or khaki, the forward one being of heavier quality than the after one. The forward cover should fit the coaming and the hook, and it is best to pass the hook through a hem in the edge, but in this case a short flap should be left on the outside on which to hook the after part.

This canvas hood is to be buttoned or laced



The cover described by Mr. Ellis is simple and easily constructed.

ridge pole. With heavy linen thread, well waxed, sew on the under side brass harness snaps, which should be large enough to be easily fastened and unfastened to the screw eyes.

The covering is now ready to be waterproofed by immersing in a solution of one gallon of gasoline and one pound of paraffine dissolved. The ridge pole should be long enough to reach from one end of the cockpit to the other, rest-

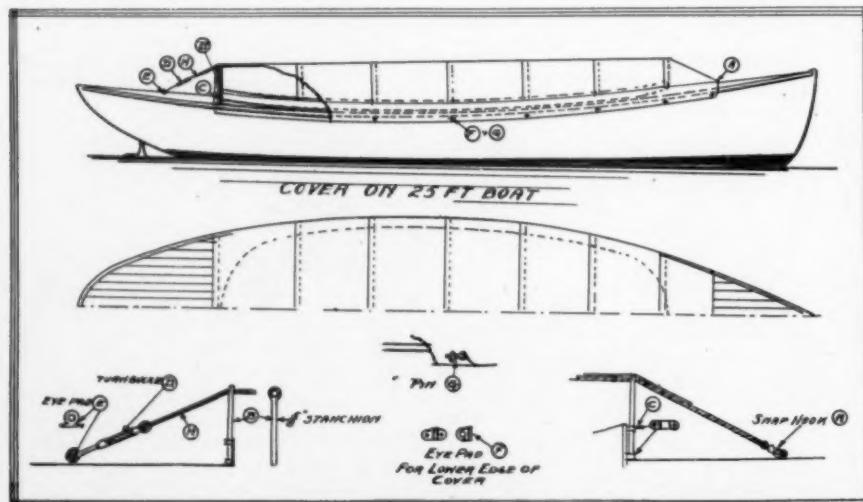
tightly to the coaming and a line led from the center of the hook to a ring on deck aft will serve to keep it tight. This makes a most satisfactory spray hood and is both stronger and safer than the high hinged spray hoods, especially for use on smaller boats.

The after apron is similar to the other, but is arranged to hook to the flap of the former with small snap hooks on its under side and to button or lace around the coaming, the line serving to keep it high enough so that pockets will not allow the water to leak in. When not in use the cover may be stowed in a locker or it may be left on the rod and carried just forward of the coaming on deck, where it may be lashed.

HUNTINGTON, New York City.

Fisherman's Cover Modified.

THIS cover consists of a boat hook 2 or 3 ft. shorter than the cockpit, a crutch similar to the boom crutch of a sailboat and a canvas cover cut to fit. In the middle of the coaming forward I bored a hole just large enough to take a straight pike of the boat hook, pitching the hole slightly downward from the inside. On the inside of the coaming a few inches forward of where the end of the boat hook comes when inserted in the forward hole, I placed brackets for the crutch, which is made sufficiently long to elevate the boat hook 12 or 15 in. above the coaming. The canvas was cut to fit this frame, having it come down to the deck all the way round, outside the coaming, and putting in a hem of about 1 in. All around and just inside the hem at suitable intervals I set cringles through each of which a piece of stout line was fastened, leaving two loose ends, which were tied to screw-eyes set at corresponding points.



In Mr. Cassidy's cover wooden battens are inserted in the seams.

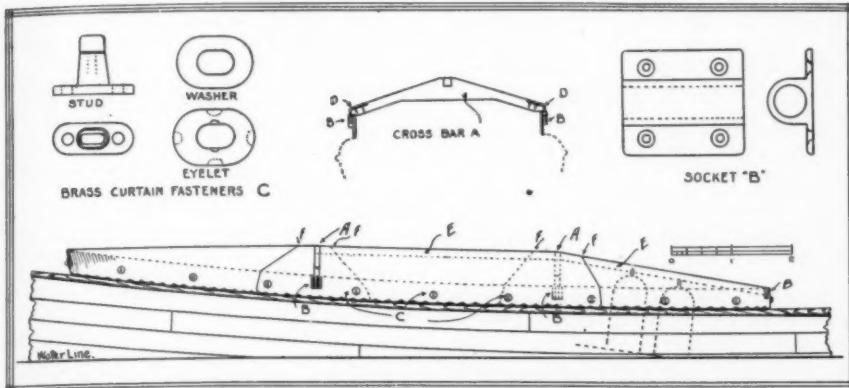
metes or eyelets worked into it abreast of each batten and of sufficient size to slip over brass screw eyes in the sides below the gunwale half-round. Small oak or brass pins secured to the curtain by cords may be used to slip

ing on the coaming. If the coaming is high enough curtain fasteners may be used instead of harness snaps.

When not in use this covering may be left on the dock or may be rolled and left fastened

The cover has pitch enough so that all rain or spray will run off and presents but little surface to the wind, so that the boat will not tug at her mooring. When running in rough weather this cover may be used as a spray-hood, leaving the after part open.

F. M. COMEE, Cambridge, Mass.



The forward part of R. M. C.'s cover may be used separately as a spray hood.

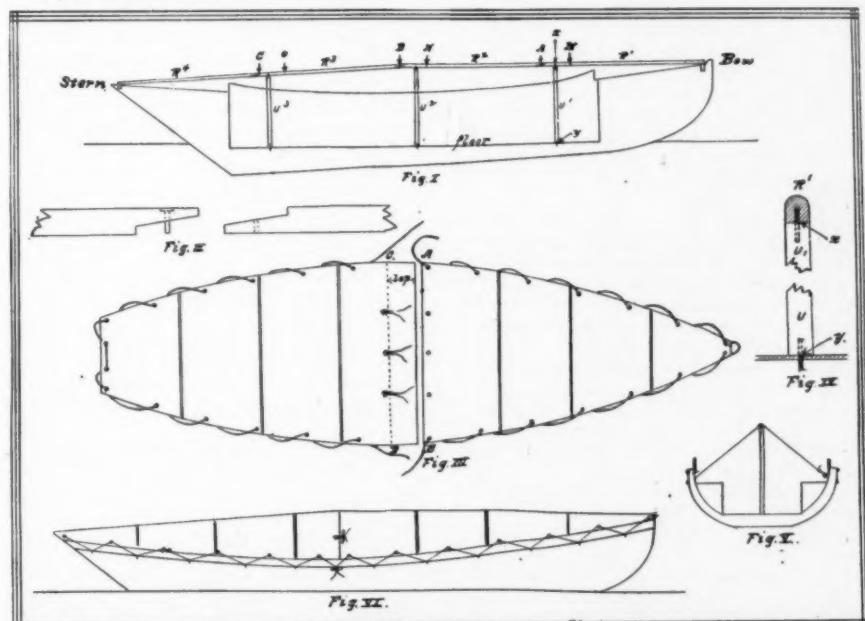
Cover in Three Pieces.

THE following description and accompanying sketch will give an idea of the home-made cover which is cheap and has proved very satisfactory. The cockpit of my boat measures 3 ft. 2 in. x 11 ft. 7 in. The engine is installed aft and is exposed. I arranged the cover in three sections, any one or two of which may remain up when under way as a protection against rain or spray, or all three may be removed, rolled up and stowed, no piece being over 3 ft. 6 in. or 4 ft. in length. Owing to the necessity of clearing spark plugs with the after longitudinal bar, the cross bars are raised about 6 in. above the coaming. The frame consists of four pieces: two cross bars with $\frac{1}{2}$ in. pins to fit into sockets on the coaming and two longitudinal bars, one to be used between the two cross bars and the other from the after bar to the coaming. Three sections of canvas cut and sewed to shape are held in place along the outside of the coaming by curtain fasteners, and tent hooks and eyes are used at the ridge where the canvas overlaps.

R. M. C., St. Elouthere, Quebec.

Cover Laced to Hooks.

TO properly hold a cover, it is necessary to have some method of support so that there will be no sagging at any point to hold rain water. The arrangement



The design by W. H. N. is quickly removable and easily stowed.

shown in Figs. 1 and 4. This upright has at either end a metal pin which fits into R¹ ward cover, and are tied in a half bow knot. See Fig. 3. W. H. N., New York City.

Removing and Replacing Piston Rings.

A Ticklish Job for the Inexperienced; It Becomes Easy If Instructions Are Followed.

Thin Metal Guides Recommended by the Majority of Contributors.

THE PRIZE CONTEST—Answers to the Second Question in the May Issue.

Ring Tongs Desirable.

(The Prize Winning Answer.)

THE piston rings in modern internal combustion engines are made and fitted in various ways. However, when it comes to removing and replacing them about the same methods are usually employed.

The most practical, quickest and easiest way to remove rings is as follows: Secure a pair of commonly called "ring tongs." These differ from the ordinary pliers in that they open instead of close when the handles are pressed together, the ends of the "nippers" are chisel shaped and allow of being forced into the ring where it is broken (cut). Three strips of tin or very thin sheet iron and a screw driver are also necessary. The sheet iron or tin "guides" will vary in size according to the size of piston, but for example I will state that strips about $\frac{1}{4}$ " or $\frac{3}{8}$ " wide and long enough to be conveniently handled are about right for a 4" cylinder.

If the rings are stuck in their grooves it is

best to soak the whole piston in a tin of kerosene a short time and then carefully pound the rings with a piece of wood. Do not use a hammer as "metal to metal" may damage the piston or rings.

When the rings are loose, force in the "nose" of the "tongs" and pry them open. If they are too stiff, you may be forced to use the screw driver instead. Never hammer the screw driver into the ring where it is cut. Work it in carefully and then when it has a good bite turn the handle, this movement will open the ring and where it has left the piston insert one of the tin strips. Next get another "bite" on the ring further around by inserting the screw driver under the ring where it is partly out of the groove and then slide in

another "guide." Repeat this process until you have the third "guide" in place. The strips of metal should be placed 120° apart.

When they are all in place the ring should be free from the piston all around. Where the ring is "cut" it will be slightly open. Now slide the ring off and then take off the others the same way. It is always easy to get the first ring off but when it comes to the others it is very difficult unless the "guides" are used, for the ring will spring into the grooves of the other rings.

After the rings have been cleaned or adjusted they can be easily replaced by employing the same means. It will be found necessary to tie the guides on the piston.

Extreme care must always be exercised when expanding piston rings not to go beyond the "limit," as they will break easily. The elasticity of cast iron is very limited.

A. L. BRENNAN, JR., New York City.

Do Not Pry When Stuck.

TO remove piston rings cut several strips of tin about two or three inches long and a half inch wide.

If the rings are stuck in the grooves of piston, soak in kerosene and work them loose. Do not try to pry loose as you may snap ring. If necessary pry one end up enough to tap lightly on end with some soft metal as brass or lead. When loose in groove pry up one end and place three or four of the tin strips lengthwise across groove under ring, slide the strips around the piston until you have one under each end of ring and the others about equally spaced. You will then have your ring resting on the strips of tin and clear of the groove and it can be slipped off either end of piston even to slipping over other rings or grooves.

"BULOW," Bulow, Fla.

Pry off Sideways.

FIRST, obtain a flat piece of steel, an old hack saw blade with the teeth broken down is just the thing.

With a fine screw driver lift one end of the ring from its groove and slip the hack saw blade under, so it rests on both sides of groove.

Now with two or three fingers under the edge of the ring lift gently until the ring overlap the head enough to hold. Another piece of steel may have to be inserted alongside of the present piece and slipped an inch or so around the head, then lift the ring and keep moving the blades and lifting the ring out of its groove until clear around, then the ring will be held on the head just outside the groove, from there it may easily be slipped off; to replace, catch both ends of the ring firmly with the thumb and forefingers, place the ring on the head and spring out evenly until it slips on the head, from there snap it into place.

W. N. ELLIS, Ellis, Ohio.

Used Hack Saw Blades.

IF a ring should be fast soak on plenty of kerosene, turning the piston and tapping very lightly with the handle of a small hammer until it is free; have a nail keg and place 2 strips of wood across the top, place the connecting rod inside the keg, the bottom of the piston resting on the strips, have about 6 pieces of thin steel about 4 inches long. Worn out hack saw blades are excellent for the purpose. Mark the rings 1-2-3. Work the steel back and around the top ring first until it is clear of piston, raise to the top and off, then raise the middle and bottom ring. Remove all dirt and carbon and replace in a similar manner, putting the bottom ring on first.

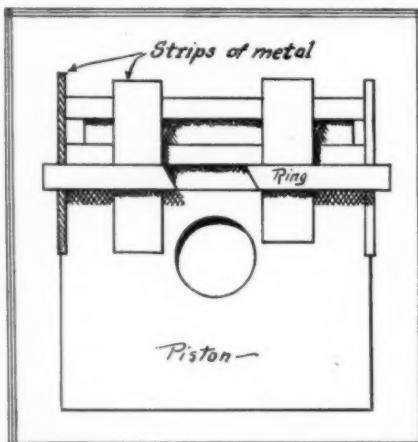
W. H. ELLISON, W. Philadelphia, Pa.

THE main difficulty in removing or replacing piston rings is to expand them evenly, so the strain does not come at any one particular place.

Procure a number of thin sheet metal strips, $\frac{1}{2}$ " by 3", (a tomato can will answer for material) 6 strips will do for a 3" or 4" piston, 8 strips for a 6" one.

To remove, press the ring towards the cut side, and by prying slightly with a small screwdriver in the cut it may be opened enough to place one of the strips under it. Do this on both sides of the opening, and then slide the strips around the piston until there is just enough room for two more. Repeat this until all the strips are under the ring, then slide them around the piston until they are all about equal distances apart. The ring may now be drawn off piston, using care to do so evenly.

To replace a ring, use the same number of strips as in removing. Space them evenly around the piston with the ends projecting



Mr. Durkee's method of removing rings.

about 1", and wrap a piece of wire around to hold them in position. Place the ring over these and gradually work it towards the piston. When close to the piston, force the side opposite the cut on the piston for about $\frac{1}{8}$ ", then work the rest over. When the ring is over the ridge next to its groove remove the strips, one at a time, and push the ring until it snaps into its groove.

H. V. DURKEE, Philadelphia, Pa.

Strips of Tin Used.

FIRST, mark the piston rings in such a manner so the right ring will be replaced into the right recess; next, see if the

rings are pivoted, if they are, take out the pivots or hammer them through the ring into the piston. Now, get a screw-driver and carefully pry up one end of the ring just out of the recess so that a small piece of tin can be placed between the ring and the side of the piston. This piece of tin must be longer, of course, than the width of the recess and thick and wide enough so that the pressure from the piston ring will not bend the tin. Now, work this piece of tin around until it is about opposite the cut in the ring on the other side of the piston. Four or five of these pieces of tin should be placed in this way between the piston and ring, and should be placed at equal distances. These tins play the most important part as they key the rings wholly out of the recesses so the rings can be slipped down over the piston to the nearest end.

Putting on the rings is just as simple as taking them off. Put on the inner rings first, making sure, that the tins are over the outer recesses and, that you have the right ring. When putting the rings on the piston, do not pull the ring apart suddenly, but very slowly, and, only pull it apart enough to pass over the piston. After the ring is on the piston, push the ring downwards to its recess and do not place your fingers on the under part of the ring.

H. B. STRYKER, Cambridge, Mass.

Forget the Screwdriver.

REMOVING the rings from a piston is not such a ticklish job as may be imagined. Like everything else, there are two ways to do the job.

"One is easy, the other ain't."

The easy way, is to get about 6 pieces of sheet brass, something between the limits of 16 and 22 gauge and then start at the top ring.

After softening any gummed oil, or carbon, gently work one of the brass pieces at the joint and slowly pull it around the ring until it comes hard against the wide part at the rear. Then slip the second piece in at the joint and work around under the opposite half. Continue on alternate sides until the ring is clear of the groove. It will then readily come off the piston if moved with a circular motion.

To replace simply reverse the foregoing or else spring on to the piston and work down to the groove in a circular motion.

It might be well to forget that there are such things as screw-drivers, jack knives, etc., else you are liable to be placed in the position where you will have to tell the other fellow that the "darned ring" was brittle anyway and you knew it would break.

C. PETERSON, Brooklyn, N. Y.

Preparing the Boat's Bottom for a Race.

A Number of Methods for Treating the Bottom of a Boat to Obtain an Increase in Speed
Pot Lead, Graphite, Spar Varnish, Stove Blacking, and "Elbow Grease" Recommended.

THE PRIZE CONTEST.—Answers to the Third Question in the May Issue.

Spar Varnish Recommended.

The Prize Winning Answer.

er you use with the sand-paper, and the care with which every hole is stopped with putty. About three days before the race carefully dust the surface, and put on a good smooth coat of spar varnish, which will dry in about twenty-four hours, and should be followed by a second coat, over the whole boat, timing it so that it will be dry to the touch, the morning of the race. This will produce the smoothest surface you can possibly obtain, the new varnish being so slick that water will not stick to it. Of course

rubbing down between coats will help some in the smoothness of the final coat. This treatment is superior to black lead, as it is cleaner and easier to handle, as that material requires skill to apply, and if the boat is left in the water after a week any kind of paint can be successfully applied over the varnish, whereas, black lead and similar compounds must be burned off, as no paint will stick over them.

A second coating of varnish will be still smoother if, when the boat is hauled out for the next race, the whole bottom is carefully gone over with sand-paper and the process repeated.

Carefully go over your stem band and see

SINCE we know that wave making, skin friction and eddy making are the three resisting elements which retard the speed of a boat, and we know that we cannot change the wave resistance without changing the hull, it is up to us to turn our attention to skin friction and eddies. A smooth bottom is a prime necessity.

If the boat has been painted with copper paint, just as soon as she is hauled out and is still wet, go at the bottom paint with stiff old brooms and water, and the copper will scrub off in a hurry, and you can complete the job with a scrubbing brush. After the wood has dried, the smoothness of the surface depends entirely on the amount of en-

that it is sharp. All propeller struts and rudder edges should be smoothly rounded on the forward edge, and tapered thin aft. If there are any lock nuts protruding outside the planking at the water pipes, carefully "build up" around them with wood tapered on the edges, so that the water will flow by smoothly. A lock nut on the shaft aft the propeller, tapered to a long, fine point, will eliminate any eddies there. Always remember to overlook no detail, no matter how trifling apparently, for it is details which spell success or failure. Just what can be accomplished by smoothing and refining the outside of the hull varies so greatly with the type of the boat that no definite statement can be made in general, except that skin friction is a large factor in a speed boat's performance, and judicious reduction of it is bound to procure noticeable results.

H. JORDAN MACKENZIE, New Orleans, La.

Pot Leading Beneficial.

ABOUT thirty minutes before the race is to be called, or the trial is to be made, run to your dock, and having your slings all ready beforehand, sling your boat clear of the water and with numerous cloths wipe off the surplus water, with which will come the rough, muddy scale. Now allow it to dry for a few minutes, say until fifteen minutes before the time is called; then with a paint composed of one pound of fine flake graphite to one gallon of pure raw linseed oil, quickly paint up to and above the water line, being careful not to use extra care to smooth and being sure it is on thick enough, as the action of the water will soon smooth it and wash off the few drops surplus; lower your boat and make for the line to be called.

After the race or trial again sling the hull and swab off with gasoline.

On my 14.3 mile boat I did 15.1 over a stretch of two miles which we timed, but the conditions may be changed and another time it may not show up as well, but it has been demonstrated that painting the hull with graphite, sometimes called "pot leading," will increase the speed.

W. N. ELLIS, Ellis, Ohio.

Some Advantage in Graphite.

SINCE, as the naval architects tell us, fully one-half of the propulsive force of a power craft is used to overcome surface friction, it would appear that any possible refinement of the immersed surface of the hull would be well worth while. We are all of course familiar with the marked reduction of speed which is apparent when a boat's hull has become foul with barnacles and other marine growth. We also appreciate that any minor roughness from whatever cause does its part in retarding the vessel's progress through the water. It is evident, then, that the smoother the craft's underbody can be made the greater is the speed that can be expected from engines of any given horse-power.

Many of the anti-fouling bottom compositions now upon the market will give a very smooth and satisfactory surface, and there are racing motor boatmen who pin their faith to "Marblehead Green," "McInnis Compounds," or "Bridgeport Bronze." Many other skippers prefer a bottom of spar varnish, and a considerable number of racing craft are planked with cedar, mahogany or teak and "finished bright" all over, their hulls being rubbed to a piano finish from deck to keel.

It is, however, deemed advisable by many experts to treat the bottom with black lead (or "pot lead" as it is often called) when any race of unusual importance is upon the program. The bottom should first be put in perfect order. All cracks and crevices should be carefully filled with white lead, putty or elastic seam composition and the whole bottom well above the water line should be made as smooth as fine sand-paper can make it.

The usual methods of applying the powdered graphite (Dixon's Yacht Plumbago) is the

usual material) to the boat's under body are as follows: Either the graphite is mixed with shellac to a very thin consistency and applied with a soft brush; or the surface to be treated is first shellaced and the graphite is shaken over the surface while it is still sticky through a cloth bag of moderately coarse texture. Only a small area should be treated at a time, since the shellac will dry very rapidly. In both cases the entire surface when dry should be rubbed to a polish with a cloth, cotton waste or a soft brush. Any rough places should be carefully smoothed off with very fine sand-paper. It is probable that such an application of powdered graphite or plumbago is the best method of producing the ideal racing bottom either upon a sailing craft or a power boat. Just how much this surface would assist in producing the highest possible speed is not easy to determine. The gain over a first-class bottom of some good anti-fouling composition would necessarily be rather small. Still, it is the little things that win races and no chance is too slight to receive careful consideration from the wide-awake racing skipper.

ALLAN O. GOOLD, Portland, Me.

Red Lead and Graphite.

ASSUMING that the hull is new, it should be carefully planed perfectly smooth and sand-papered across the grain with coarse sand-paper. Give it a second treatment with fine sand-paper. If the wood is soft apply one or two coats of ordinary shellac, mixed very thin to let it strike into the wood and give a hard surface. This will also prevent the putty in the seams and rivet holes swelling. After the shellac is set thoroughly hard, sand-paper a third time (this may be omitted); then apply two coats of pure red lead, allowing each to harden thoroughly. Sand-paper the red lead to a smooth finish.

Mix "air floated" graphite with turpentine to the consistency of paint. Add to this one ounce of good varnish to each quart of the mixture as a binder. Apply like paint to the red lead surface and allow the graphite to set for 30 minutes, after which polish with an ordinary stove brush. This may be followed with a second coat and again polished. The result will be a perfectly smooth surface which will last for a considerable length of time. To renew the surface, after using the boat for several months, let the hull dry out thoroughly, sand off lightly and apply a coat of the graphite, polishing as before. If this is done two or three times each season the red lead underneath the graphite will last indefinitely. This treatment is also excellent for cruising boats. Two pounds of graphite makes enough of the mixture for a 40 foot boat.

While treating the bottom of the boat do not forget that it is just as important that the hanger, strut bearings and propeller should be very thin and sharp. Careful attention to these details will result in a gain of one to three miles an hour in speed.

P. H. HESSER, Cincinnati, Ohio.

Pot Lead, Alcohol and Shellac.

FROM personal experience I find nothing comparing to pot lead for a nearly frictionless bottom, during the past fifteen years handling both sail and power craft. I have used many different paints and compositions. In getting ready for sailing races, we used a treatment that we called "Blackballing," which is very good for a race, but will wear off in a few weeks. The ingredients are at hand at almost all times. We would cut up fine two sticks of stove blacking, breaking in three eggs and using stale beer or ale for a liquid. After sand-papering and cleaning the bottom we would apply the solution evenly and smoothly, waiting until it dried. We would go over it with stove brushes, polishing until we obtained a high finish. The above treatment has been responsible for our winning some of our races. To obtain every second's time from a boat it is necessary after

pulling her out to prepare her for a race, to go over her entire bottom, smoothing down all rough places and sand-papering (using plenty of elbow grease) until the bottom is good and smooth. With a plane sharpen the stern. Sharpen both ends of the rudder, refine the skeg and deadwood, favoring all parts for an easy entrance to the water. For a launch about 30 feet over all, purchase a two pound can of Dixon's pot lead, one gallon of denatured alcohol, and three pounds dry shellac. Get some jars or wide-mouthed bottles and fill about three-fourths full of alcohol, adding the dry shellac, allowing it to stand over night to dissolve. When ready to go to work mix in pot lead to the consistency of cream. It makes a much better job to have two men put on this coating. That is, start at the bow, work back slowly, followed closely by your helper, he having a pot of liquid composed of plain alcohol and pot lead, which gives a splendid top coat and adheres nicely to the first coat. Then go over the entire bottom with soft cloths, getting a good polish, and you will have a bottom that will give good long service. Three years ago with my present launch, having a painted bottom, the very best speed that I could obtain was a speed of ten miles per hour (over a Government surveyed mile course on the Delaware river at Deep Water Point). After making some changes consisting of sharpening the stern and rudder, refining of skeg, etc., and using the pot lead as above, I have an increase of speed to over eleven miles per hour, running over the course in 5 minutes and 10 seconds.

W. H. ELLISON, W. Philadelphia, Pa.

Polish With Graphite.

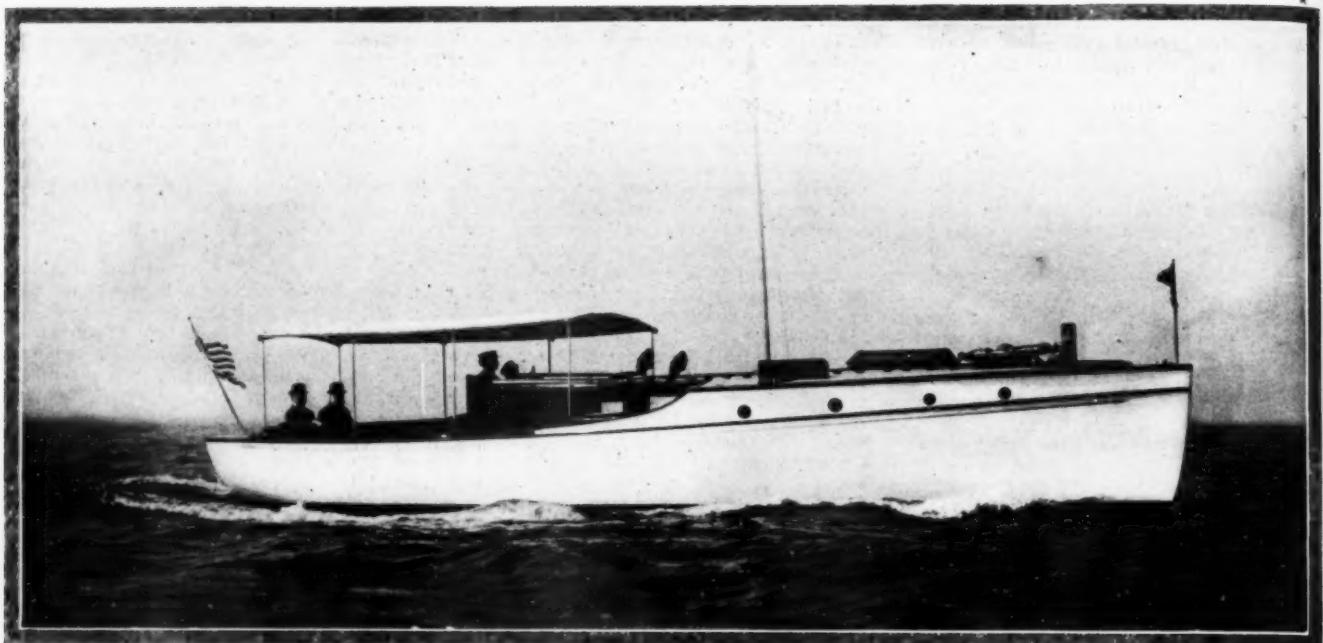
IN replying to the above question, it is apparent at once that the greatest factor in the speed of any vessel is the contour of her hull, and in the second place the care taken of that portion of it under water. Realizing that it is impossible to change the construction of the hull to reduce the displacement, we find that it is necessary to resort to some device so applied that the same volume will offer less resistance to the water while being propelled through it. Opinions differ as to the benefits derived from this practice, but all agree that the smoother the surface exposed the less the resistance it will offer, and with this object in view the following suggestions have been frequently used with success on wooden hulls.

Plane and sand-paper the surface till it is as smooth as it is possible to make it, and then wet it to raise the grain and go over it again with sand-paper. Purchase some dry graphite, or if this is too expensive some ground plumbago or pot lead will do in a pinch. Mix enough of any of these ingredients with turpentine and a small quantity of boiled oil and varnish to apply one coat to the portion of the hull desired, being careful that the mixture is very thin, and apply it in the same manner as paint (with a brush), and allow at least a day for it to set. After it is thoroughly dry dip a soft rag in the dry graphite or whatever is used and polish to a good bright finish, which will require considerable time and energy to be done properly, leaving the hull as smooth as glass and greatly lessening the friction from the water. This treatment will only last for one day and the boat will have to be hauled out and again polished with a soft rag and dry graphite should be entered for another race.

It is impossible to accurately state just how much this method will increase the speed, as there are so many different items to be considered that it is seldom, if ever, the same boat will cover a given course under the same conditions.

It may be further stated for the benefit of anyone contemplating using the above idea that it is necessary to remove every particle of graphite and get down to the bare wood before painting again, as paint will not stick wherever there is the least bit of the mixture.

E. A. CRAWFORD, Newark, N. J.



Carola, with her 16-20 horse power Standard, maintains a speed of 10 miles per hour.

Carola--A New 40-Foot Cruiser.

Photographs by Edwin Levick.

CAROLA is a 40-foot cruiser, designed and built by the Electric Launch Company, of Bayonne, N. J., and owned by Mr. Isaac Guggenheim, of Port Washington, L. I. She was designed throughout with the idea of combining seaworthiness and reliability, the chief requirements of a cruising power boat, with comfort and moderate speed. She has a beam of 9 feet 8 inches and a draft of 3 feet 9 inches, the liberal beam allowing steadiness and permitting unusually roomy cabin accommodations. The keel and frame are of oak construction, the keel measuring 4 by 6 inches and the frames $1\frac{1}{2}$ by $1\frac{1}{2}$ inches, spaced 10 inches apart. The bilge stringers are of yellow pine, $1\frac{1}{2}$ by 3 by $3\frac{1}{2}$ inches, the deck beams are of white oak $1\frac{1}{2}$ by $2\frac{1}{2}$ inches, and the decking is of white pine $1\frac{1}{2}$ by $1\frac{1}{2}$ inches. The planking throughout is of $1\frac{1}{2}$ inch southern cedar, copper fastened.

The interior arrangement consists of a state-room forward, providing sleeping accommodations upon two standard full length berths; a main saloon just aft of the state-room, provided with two extension transoms; an engine room amidships where sleeping accommodations for one can be provided if necessary; and a cockpit aft protected by an awning and storm curtains and equipped with two cockpit settees.

Upon the starboard side of the engine room, next to the companionway, is the galley, pro-

vided with a sink, a large ice-box and commodious lockers. Upon the port side of the engine room is a seat with lockers underneath and forward of this is the lavatory, also provided with lockers. Throughout the whole construction special attention has been devoted to the arrangement of cabin space and to the provision of commodious lockers and full length clothes closets.

The design of the craft is the result of a number of years' experience in providing a comfortable cruiser, possessing seaworthy qualities and advantageous interior arrangement, making the best use possible of space. The planksheer, molding, coaming and the outside of the cabin house are finished in selected African mahogany and the interior woodwork of the cabin is of selected white pine, finished in white enamel with mahogany trim.

The inside of the hull is covered with two coats of lead paint to preserve the wood and the outside is given three coats of anti-fouling green copper paint below the waterline with three coats of white lead above the waterline. The outside joiner work is finished in African mahogany, including the skylight forward over the state-room and main saloon, the companionway, coaming, planksheer, cockpit ceiling and seats. The decks are finished with three coats of spar varnish and the roof is built up of matched white pine, supported upon oak carlins covered with canvas and made

water-tight by three coats of straw color paint. The bulkheads, seats, berths, locker fronts and doors are finished in white enamel and the mahogany dresser in the forward end of the state-room is finished with a plate glass mirror.

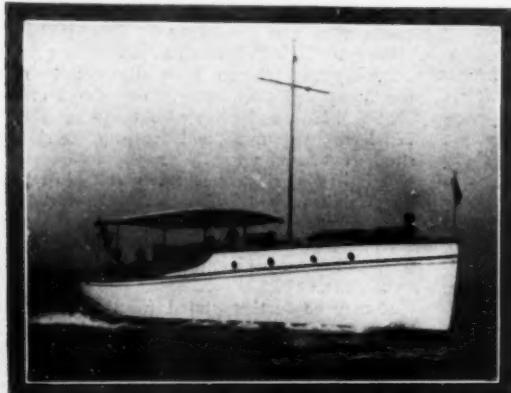
The power plant consists of a four cylinder, 16-20 horsepower Standard engine, having a bore of 5 inches and a stroke of 6 inches and is equipped with a dual system of ignition employing both battery and magneto and operating

make and break ignition. The propeller wheel is of bronze with Tobin bronze shaft and bronze bearings. A compressed-air whistle, which is placed upon the cabin roof, is supplied from an air tank under the cockpit floor. The steering wheel is located upon the port side of the cockpit with flexible steel tiller lines operating the rudder, which is of solid brass. The cockpit awning and side curtains are carried upon a galvanized iron frame.

Two gasoline tanks installed under the cockpit seats hold 100 gallons, giving a cruising radius of about 450 miles. These tanks rest in wooden cradles placed on the water-tight cockpit deck and drain overboard through the scuppers. The gasoline supply pipe to the carburetor is led on the underside of the cockpit deck beam and the exhaust pipe from the engine is carried out through the stern transom with circulating water. A reverse control lever and throttle are placed next to the steering wheel, making the cruiser a one-man boat in every sense of the word.

The ventilation of the engine compartment is provided for by two cowls on the cabin roof, sliding windows on the sides of the cabin house and the companionway leading to the after cockpit. The skylight forward ventilates the state-room and main cabin together with the brass rimmed, hinged ports on the side of the hull.

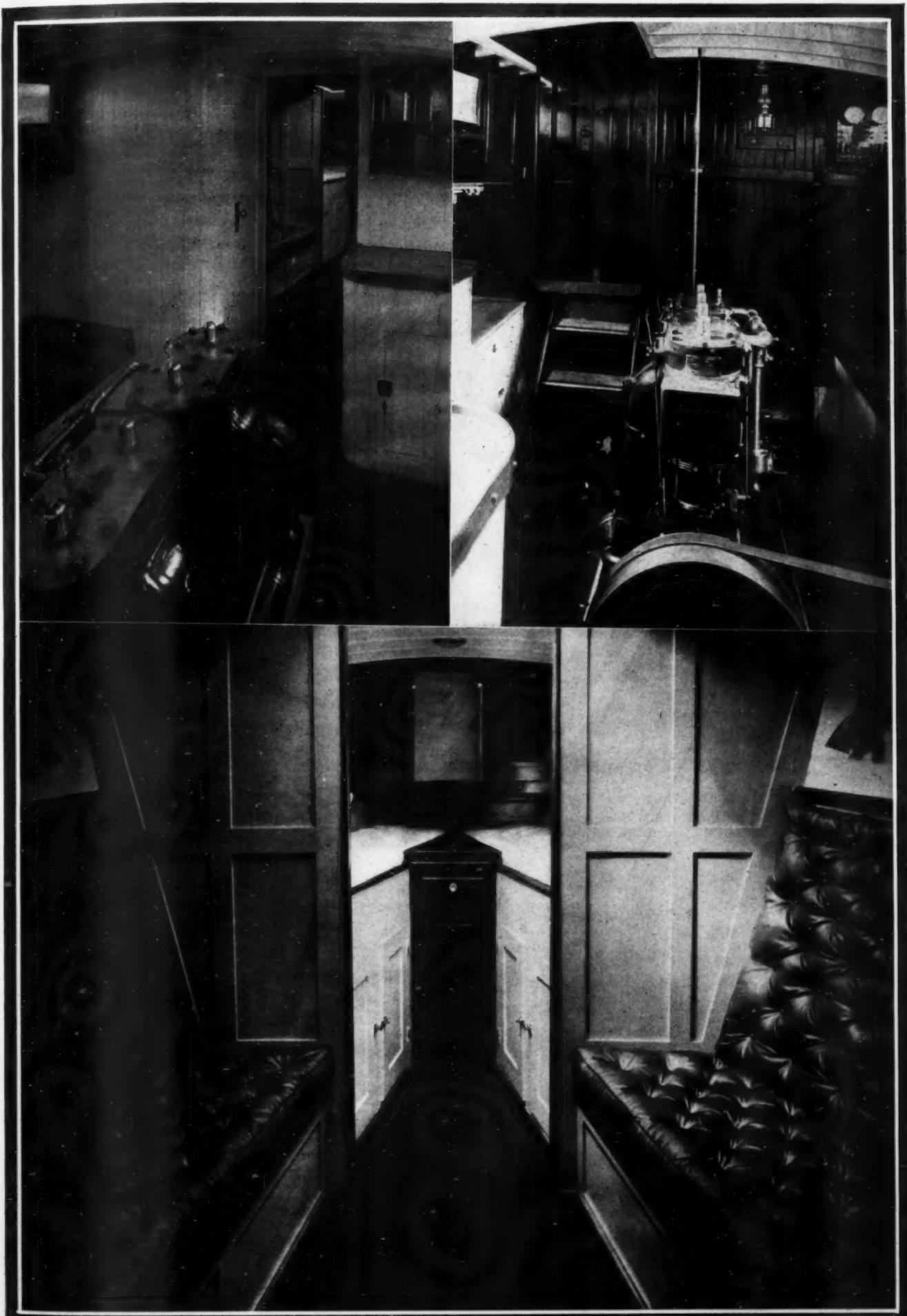
She is lighted throughout by electricity.



Her draft and free board are liberal.



The stern shows no tumble-home.



Interior views of Carola, the new 40-foot cruiser, designed and built by the Electric Launch Co. at Bayonne, N. J. Above on left, the engine room and galley, looking forward; on right, the engine room, looking aft. Below, the saloon, looking forward to the stateroom.

Talks With Our Naval Architects.

Capt. Leonard J. Nilson.

AMONG the American naval architects coming rapidly to the front as a designer and builder is Captain Leonard J. Nilson, of Baltimore.

Captain Nilson is one of the few naval architects who has risen from the rank of a seaman, and his earlier training in the handling of vessels has given him a range of practical knowledge that has wonderfully broadened his views and given to him the understanding of many of those things little known to the theoretical workers.

He was born in Sweden and went to sea when fourteen. Upon completing his ninth year as a mariner he arrived at Boston and he resolved that he would take up the designing of vessels. He was 23 years of age, not too familiar with the English language, and empty of purse but filled with a determination that has been characteristic of his life. He took a course at night school to prepare himself for a course at the Massachusetts Institute of Technology. It was a struggle to obtain this schooling, but he was graduated from "Boston Tech" in 1891 with special honors.

After spending some time in the employ of Geo. Lawley and Son, Capt. Nilson went to Baltimore, and has been there for the last sixteen years.

Some of the more important boats designed and built by Capt. Nilson are the auxiliary yawls Dione, Ideilon and Natka, the auxiliary schooner Ednada and the steam yacht Chilhowee. In the power boat class are included a number of commercial craft, including four boats each named Petrolia, for the Standard Oil Company. A recent tug that he has built is Broadwater, the design of which appears in this issue, and he has just completed plans for an 80-foot tow and fire boat for the city of Houston, Texas.

In power yachts, Capt. Nilson has designed and built many good boats, including the

Nuska, built last year for Mr. Carlton W. Slagle, commodore of the Baltimore Motor Yacht Club, and the Freelance, just completed for Mr. Garnett Y. Clark, commodore of the Arundel Boat Club, of Baltimore.

Captain Nilson is an advocate of heavy con-

MOTOR BOATING. "The internal combustion engine is no longer an experiment. It has taken its place in sport and in commerce and is rapidly supplanting sail and steam. Likewise, the day has passed when any kind of a boat will make a motor boat. Time was when old sloops and schooners were dismantled, their masts taken out, engines were installed and they were called motor boats. Now a man who desires a motor boat finds that such craft, especially designed, are available and at reasonable prices.

"The designing of a motor boat requires considerable skill for one must take into consideration many features, especially where it is to be used and for what purpose. I believe in heavy construction for motor craft. I do not mean clumsy construction, but the framing and planking must be of sufficient strength to withstand the shocks and to reduce vibration to a minimum.

"In the choice of engines there is a wide range, and care should be used in selecting an engine with a view of the work it is to do. I always recommend the high grade machines because, in the long run, they are cheaper.

"As in engines so is it in everything else that enters into boat building. The best is always the cheapest in the end and those who own boats should only entrust them to the hands of experienced men.

"A boat well designed is half built and, though I do say it, the man who both designs and builds has a great advantage over the man who does only one or the other.

"The general outlook for motor boating is encouraging. There is a steady increase in the number of men who are finding pleasure and recreation afloat, better boats and better engines are being used and the sport is in a healthy and growing condition.

Since establishing in Baltimore, Capt. Nilson has turned out more than 180 sail and power craft of all types and sizes and has designed a number of boats built elsewhere.



Capt. Leonard J. Nilson, Naval Architect.

struction. He scoffs at the idea of lightly built boats, and he has no use for freaks. He believes that a boat must be built so that it will hold together in heavy weather, will resist pounding and be safe. In all of his constructive work Captain Nilson's aim has been to use only the best material and the best workmanship available.

"This is the age of the gasoline motor," said Captain Nilson to a representative of



From wash drawing by Merrick.

Freelance, one of Capt. Nilson's later designs, is equipped with a 125 horse Standard and does 14.5 miles per hour.

How to Use the Sea Anchor.

Some Suggestions Regarding the Area of Lenses. How a Boat May be Made to Turn Easily. The Article on Zeeland and How It Was Received. Letters from MoToR BoatinG Readers.

How to Use the Sea Anchor.

To the Editor of MOTOR BOATING, Sir: My enthusiasm over the very instructive articles printed in MOTOR BOATING prompts me to write you in pursuit of further information. In your April issue under the heading "To Ride Out a Storm in a Motor Boat," F. M. Comee, recommends the use of the sea anchor and describes the method of improvising such an anchor. He then says "Heave it overboard and give it good scope." This no doubt, is very comprehensive to the experienced boatman, but I must admit, is not so to me, a novice. Mr. Comee does not state from which end of the boat to heave it overboard, or which end of the boat is being attacked by the waves, or how the boat should be headed at the time the sea anchor is put out. Mr. C. Peterson is to the novice also quite inexplicit for while he mentions running before a sea he does not state from which end of the boat to cast the drag. Allan O. Goold advises casting the "drogue" from the bow and advises placing an oil bag on the cable to prevent the seas breaking aboard. I deduct from this that both the drogue and oil bag are floating against instead of with the wave, which is impossible. Mr. Geo. S. Goldie in "Novice to Pilot," page 70, advises trailing a drag astern when running before a sea and because of these seemingly contradictory statements I have come to you for advice.

C. D.

Brooklyn, N. Y.

[Regarding the use of the sea anchor, we would say that some sort of a drag is frequently used while under way and running before a sea, in order to keep the boat from "broaching to." That is, to keep the seas from throwing her around in the trough. But by far the commonest use of the sea anchor is as a drag to hold the boat's head to the sea when the power is shut off.

In other words, the sea anchor acts much the same as a regular anchor would. It, of course, drifts, but offers such a resistance to the water that it effectually holds the boat's head to the wind. It should be thrown overboard from the bow after the power is shut off and the boat has lost her headway. The line may be paid out gradually, keeping it sufficiently taut to hold the boat in the desired position. The oil bag is frequently attached to the sea anchor or some distance out on the line, so that the film of oil or "slick" will have a chance to spread before the waves reach the boat.—ED.]

Regarding Area of Lenses.

To the Editor of MOTOR BOATING, Sir: The writer notes on page 12 of the May issue of MOTOR BOATING an article relating to the equipment of motor boats, and suggests, on the subject of lights, that an effort be made to correct an error in the wording of the bill about the area of the lenses.

The width of the lens is determined by the requirement that the light must be seen over a certain arc of the horizon. The height of the lens should be given as that gives the necessary surface and consequently governs the quantity of light diffused. The diameter of the lens at the bottom of the corrugations should be given as that determines the distance that the visibility of the light is increased over a naked light. The writer has prepared an article on the subject of lights giving the matter considerable study and is now waiting for some information to come from France on the subject, to confirm my studies here.

At the top of page 13 of the Pilot Rules for Inland Waters of the Atlantic and Pacific

This department of MOTOR BOATING is open to its readers, not only for asking questions but for discussing subjects of general interest, giving the results of experience, opinions, suggestions, etc. But of course the editor will not be responsible for the statements made in such communications. All contributions should be signed although initials or other pseudonyms will be used in their publication if desired.

coasts for 1909; the minimum size of glass globes shall not be less than 6 inch diameter and 5 inches high and the arcs of circles given on pages 15 and 16 give the width.

The writer believes that when that globe was specified the person who did it knew what was being done and had studied the subject.

The writer suggests that for boats of class 1 that the lenses be 5 inches in diameter and 4 inches high with the width determined by the law as at present. The 5 inch by 4 inch lantern should have a 6 candlepower light be-

Zeeland Article Bearing Fruit.

To the Editor of MOTOR BOATING, Sir: I enclose one of the many letters received from different parts of the United States on the subject of my article in your May number.

My purpose for enclosing it is to give you an idea how much real good a little old-fashioned talk on power boats does in places far away from your home office.

J. J. DE KINDER.

Philadelphia, Pa.

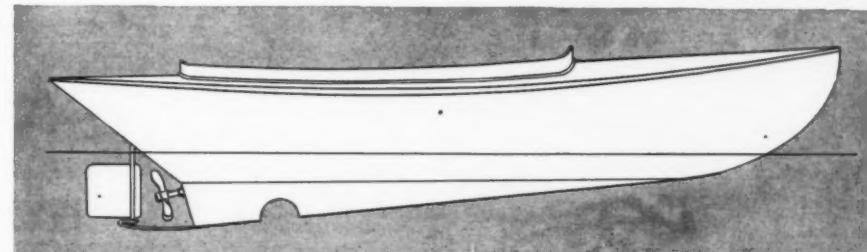
THE UNIVERSITY OF TEXAS
Austin

May 21, 1910.

J. J. de Kinder, Esq.,
Corinthian Yacht Club,
Philadelphia.

Dear Mr. Kinder:—

I have just finished reading your article on Zeeland in the May number of MOTOR BOATING, and think perhaps it will please you to know that your vigorous talk from the quarterdeck has pleased and benefited at least



The boat referred to by Mr. Howland, showing the notch cut in the keel.

hind it. For Class 2 the lens should be 6 inches in diameter and 5 inches high and should have a 16 candlepower light behind it.

Giving the area of the lens as given in the article simply opens an avenue for unscrupulous manufacturers to foist all sorts of rubbish on the market simply because they can make it cheaper.

DAVID W. DICKIE,

San Francisco, Cal.

To Make a Boat Turn Easily.

To the Editor of MOTOR BOATING, Sir: I have just come across an article in the January issue of MOTOR BOATING in regard to a boat's turning in a circle. While this undoubtedly holds good in the majority of cases, I have an exception to the rule. The boat I speak of turns so short as to actually "jump" in her wake. This was brought about by a peculiarity in her build and it has been a wonder to me that this type of boat is not better known and in more general use. The hull is of the usual dory launch type, quite wide for its length and nearly flat on the bottom, resulting in its riding on top of the water almost like a shingle. She draws about three inches with the exception of the keel, which, starting at nothing at the bow, runs down to 18 inches aft.

The peculiarity which accounts for the remarkably short turns is a semi-circular, notch about 15 inches in diameter cut into the keel as shown in the accompanying drawing. The theory is that when the helm is put hard over water tends to rush through this opening instead of having to go beneath the keel and retard its progress. The boat has all the advantages that a keel can give her with the added advantage of responding instantly to the rudder.

EDWIN HOWLAND.

Baltimore, Md.

one of the hands. My home port is Galveston, where I have spent all my life, much of it on the water or the water front. I am only a young fellow as yet—just able to vote—and have never been the owner of a motor cruiser, but it is my fondest hope to reach that state some day. However, in knocking around the bay in skiffs and sharpie sailboats, and in careful watching of the hundreds of sail and motor craft in port, both in fair weather and when they were scudding into harbor before a West Indies hurricane, I think I have learned a good deal about the ways of the sea with a boat. Long ago I resolved that if I ever had a boat with a mast, that mast would have its heel down on the keel where it belonged. Likewise I formed other theories as to strength of construction below and aloft, that did not agree with modern motor boat practice.

It pleased me greatly to see these same ideas, and other better ones, set forth by a man who knew and had tried them. I learned much more from the article, and when my little cruiser materializes, Zeeland will be one of its godparents. Other young fellows, I am sure, were impressed by and took advantage of your ideas. The majority of newcomers in the sport are young men, with no fixed prejudices, and I think that if you and others of the sea-going fleet would now and then give them a little plain talk with good, safe boats and the other kind as a text, the sport would show the effects handsomely a few years hence.

This letter apologizes for its intrusion upon a stranger; it expects no acknowledgment and needs no reply. Its only excuse is the desire to express sincere appreciation of an article much admired and enjoyed.

Yours sincerely,
JOHN G. HANNA.

New Motor Boat Designs.

THE design shown herewith is of a 56-foot cabin cruiser, designed by the Bath Marine Construction Company, Henry W. Bacon, president, for Mr. C. M. Steinmetz, of Washington, D. C. It was decided to obtain as much speed as possible without the sacrifice of seaworthiness and comfort.

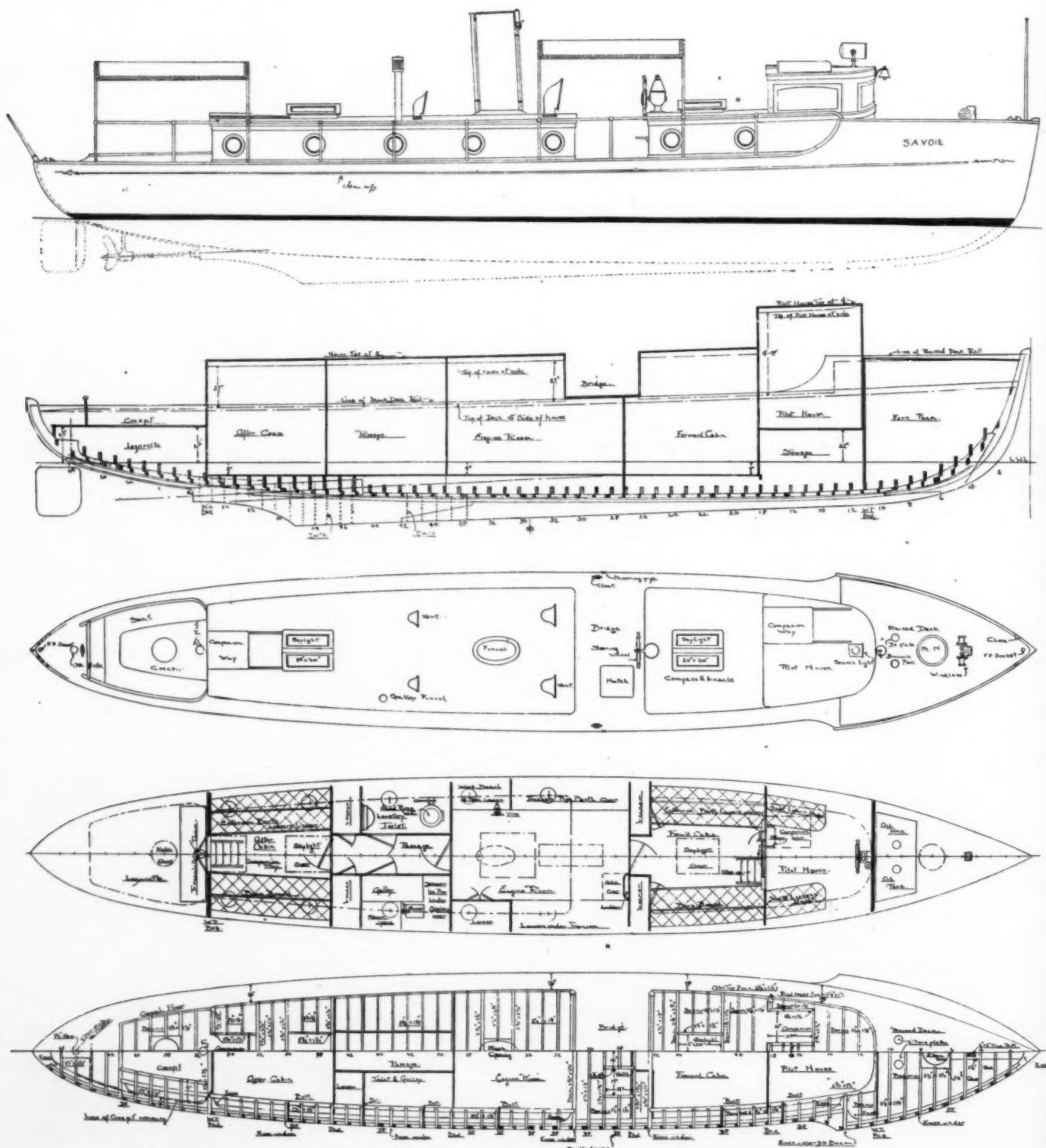
The deck is raised forward of the pilot house, its line being continuous with the tops of the cabin trunks. The pilot house, the floor of which is raised somewhat above that of

A Fast 56-Footer.

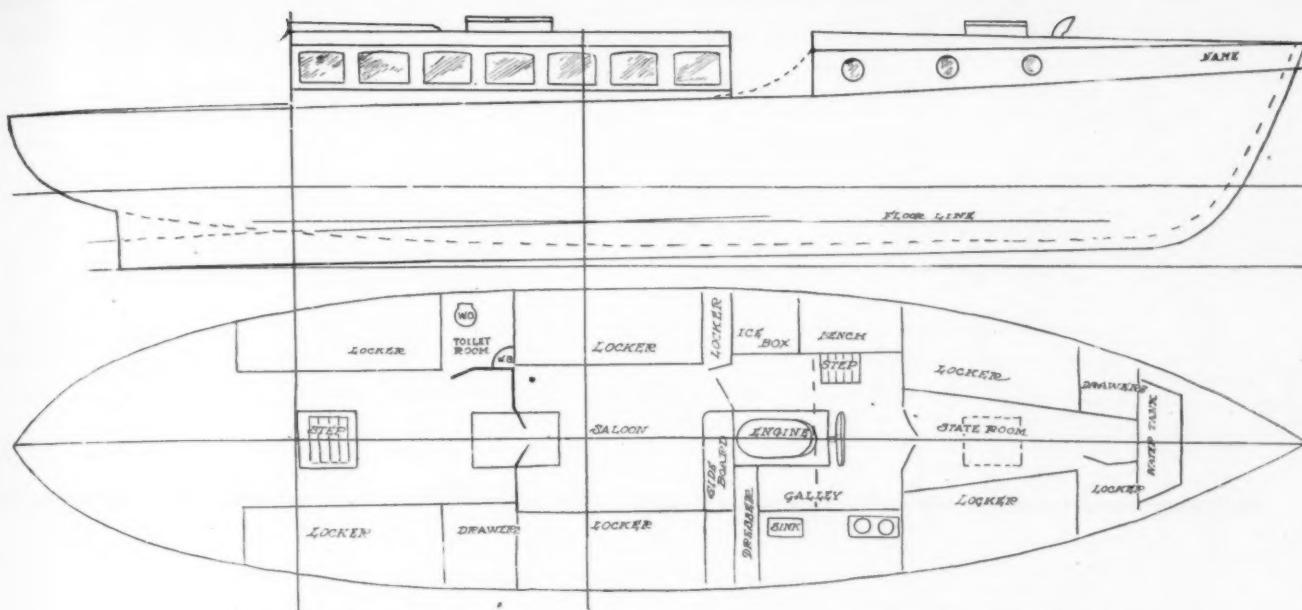
the cabins, extends an equal distance above the cabin roofs. It is equipped with locker seats, cupboards, etc., and will be used for steering in bad weather. Abaft of this and connected with it by double doors is the forward cabin with extension berths on either side and full length lockers at the after end.

The engine room is amidships, occupying the space beneath the bridge deck and the

forward part of the after trunk. This compartment is quite large and contains transoms with pipe berths above them, a work bench, tool lockers, etc., and connects by a hatchway with the bridge deck above. A large galley and toilet room occupy equal spaces to starboard and port of a passage leading from the engine room to the after cabin. This compartment has two transom berths extending along the sides and a companionway aft leading to the self-bailing cockpit.



The 56-footer designed and built by the Bath Marine Construction Company, is an interesting combination of the fast and the seaworthy. See also details on page 25.



Dr. A. H. Braecklein's 47-footer was designed by Mr. Joseph Fielder as an entrant for the Bermuda Race.

A Sea Going 47-Footer.

A LANNA, the plans of which are here-with reproduced, is now being built by C. Durm & Son, of Baltimore, for Dr. A. H. Braecklein, fleet surgeon of the Maryland Motor Boat Club, of that city, to enter the New York to Bermuda power boat race in June.

The boat will not only represent a Baltimore club, but she will be a Baltimore-built product throughout and she will be manned by yachtsmen from that city. She was designed by Mr. Joseph Fiedler, who has designed a number of motor boats in that city, and her motive power will be a 35-horsepower engine of the heavy duty type that is being built along original lines by Mr. John Bennett, whose engines are well known to the motor boatmen of the Monumental City.

motor boatmen of the Monumental City. She is 47 feet 6 inches' over all, 11 feet beam and 4 feet 9 inches depth of hold. She is of the raised deck type, is controlled and steered from a bridge deck. Her keel, stem and stern pieces as well as frames are of oak. The latter are each 2 by 2 inches and are spaced on 12 inch centers. Her planking is of long-leaf Georgia pine, 1½ inch thick, while

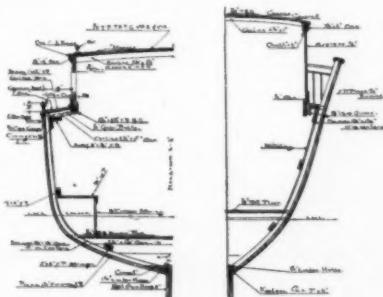
her deck will be of white pine, laid with the grain vertical, 2 inches thick. She is galvanized fastened and every precaution is being taken to have her as strong as possible without making her appear clumsy.

40-Ft. Tunnel-Stern Cruiser.

THE boat shown in the accompanying profile and plan was recently designed by the Truscott Boat Mfg. Company for Senator Lorimer, who will use it in connection with his summer home on Fox Lake, and her light draft of 16 inches will permit of her being used on Pistakee Lake, Grass Lake and the Fox River.

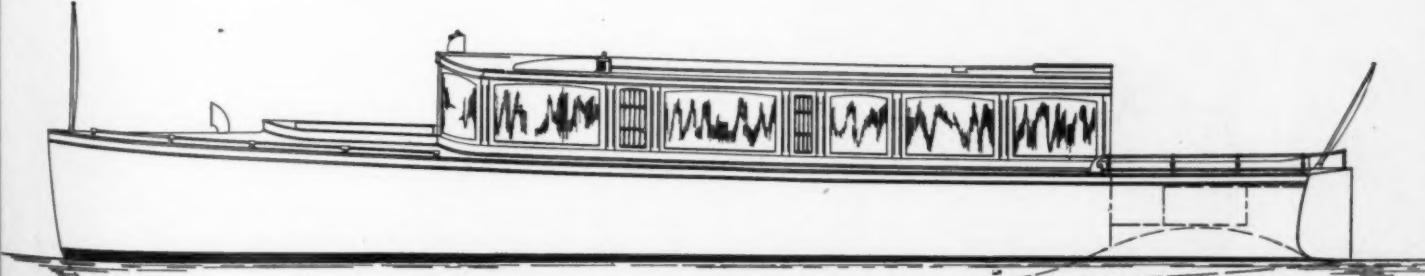
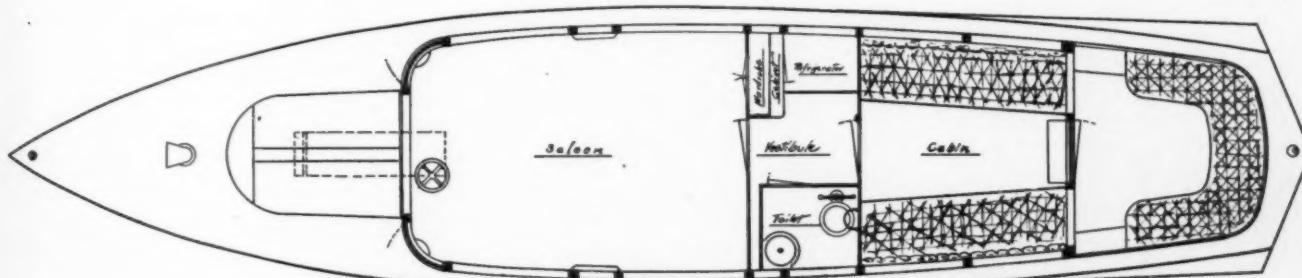
The motor is a four cylinder, four cycle Truscott of the "valve-in-the-head" type, of 4½ inch bore and 5 inch stroke and rated at 21 h.p. It is installed beneath the forward deck and its compartment is separated from the rest of the boat by a bulkhead, which is so arranged as to make it accessible either from the deck or from the cabin. The standing cabin is divided into a saloon forward which contains the steering and control devices, a galley and toilet room to starboard and port respectively amidships, and a cabin aft provided with transom berths. There is a cockpit aft provided with a seat around the after end.

The model is one that should be very comfortable for inland water and the equipment is well adapted for day cruising.

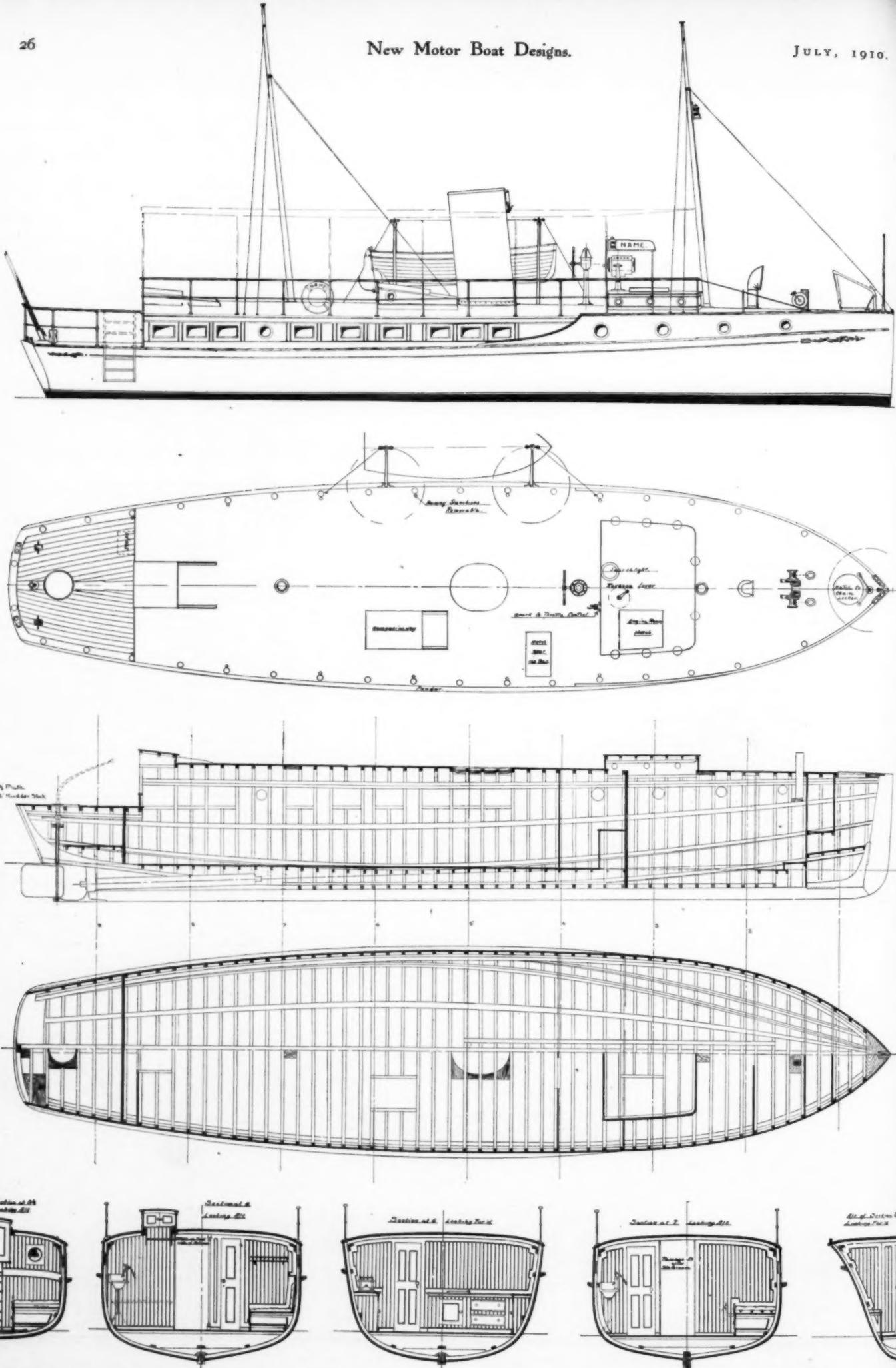


Details of the 56-footer on page 24.

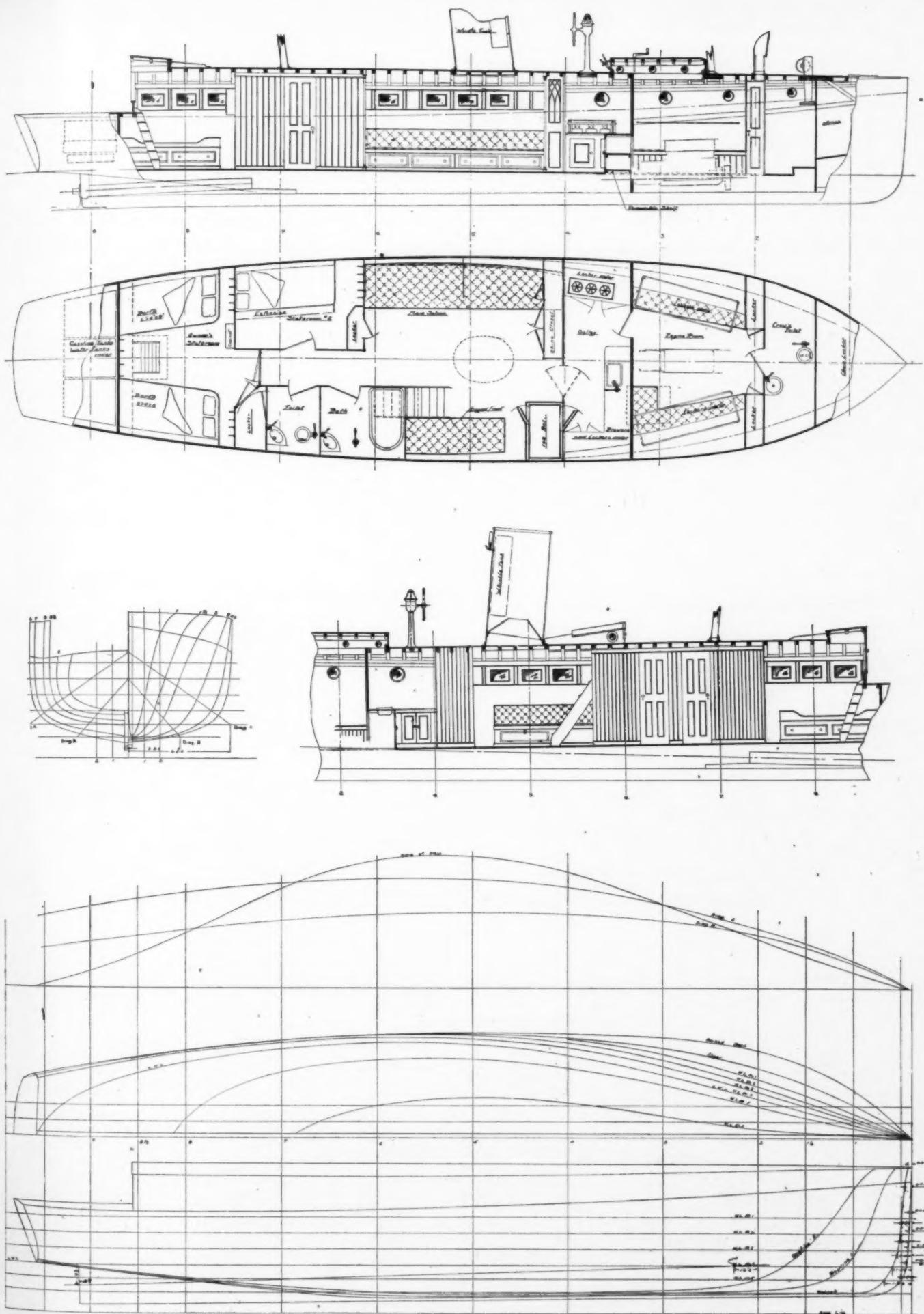
The engine will be of the three cylinder, four cycle type and will weigh close to 3,000 pounds. It will turn a 32 inch, three-bladed propeller with a pitch of 42 inches and at least 11 miles an hour is expected.



Senator Lorimer's inland cruiser designed and built by the Truscott Boat Company, is of the tunnel stern type and draws but 16 inches.



The 57-foot cruising house-boat, designed by Bowes & Watts for Mr. Geo. C. Blabon, is being built by W. P. Kirk. See description, page 28.



The keynote in the design of the 57-foot motor house-boat is comfort, but none of the essentials of the cruiser have been neglected.
See description, page 28.

A Cruising House Boat.

IN the past season or two there has been a great demand for a shoal motor house boat that could be used for Southern cruising, and on shoal bays like Chesapeake and Barnegat Bays. The plans on pages 26 and 27 are those of a boat of this type that should well fulfil these conditions. This boat was designed by Bowes & Watts for Mr. George C. Blabon, of Philadelphia, and will be used on Barnegat Bay in the summer, and in Florida in the winter.

The boat is 57 feet over all, 13 feet beam and 30 inch draft, and is now nearly completed at the yard of Mr. W. P. Kirk, at Toms River, New Jersey. She will be equipped with a 45 h.p., 6 cylinder Sterling engine.

The owner wished a boat that he could live aboard in comfort, and that could be readily handled by two men, a steward and a captain. The boat will be of the raised deck type with the raised deck carried all the way aft. In the forward part ports will be used, and in the after part windows. A moulding is carried down from the engine room bulkhead to give the boat the appearance of a raised deck cruiser forward with a deck on each side aft. The raised sides above the sheer forward will be painted white, while the part with the windows aft will be mahogany.

A small trunk cabin is placed on top of the raised deck over the engine room and galley to insure good ventilation throughout.

Forward in the bow will be the chain locker and storage space, next aft will be the crew's

toilet room, which is quite roomy; aft of the crew's toilet will be the engine room and forecastle, transoms and hanging lockers will be placed on each side, with pipe berths over the transoms. The galley will be aft of the engine room, separated from the engine room by a double bulkhead with asbestos felt between to deaden the noise. The galley is quite roomy, and will give the steward a chance to cook a meal with very little trouble.

Aft of the galley will be the main cabin with two transoms on one side, and a single transom on the other. A companionway from the deck will open on the starboard side. On the forward port side a china locker will be fitted, while on the starboard side a refrigerator will be built in, and doors from the refrigerator will open into the galley and into the main cabin, so that the owner will be able to use the ice-box for cold refreshments in the cabin.

On the starboard side aft of the main cabin the bathroom will be located, and will be equipped with a bathtub and wash basin, aft of the bathroom will be the toilet room, which will be equipped with a wash basin and Goblet Dolan water closet. Opposite the toilet and bathrooms on the port side will be located a large single state-room, with an extension berth. The owner's double state-room will be located at the after end of the cabin, and will contain two double berths with hanging space at each end. The owner's state-room is directly connected to the toilet room through a large locker on the starboard side.

The after deck will be flush and will be

large enough to accommodate about eight chairs. A stanchion rail will be fitted all around the upper deck, so that the whole top of the cabin can be used for a deck. The boat will be equipped with two spars and sails, and will have a funnel for ventilating the cabin.

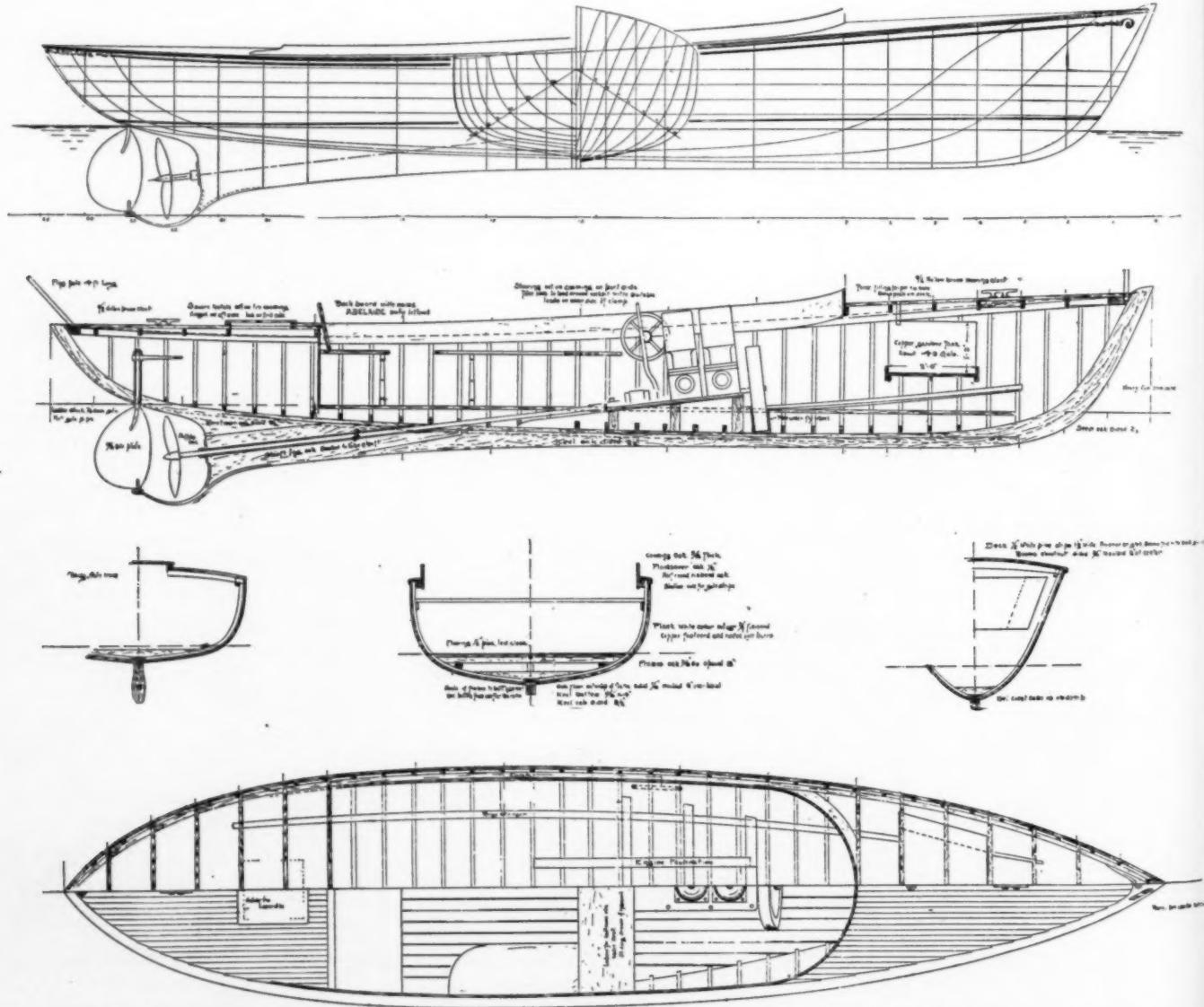
With these arrangements the boat will be quite roomy, and will afford all the accommodations of a house boat, and at the same time will look considerably better.

The Cooley Runabout.

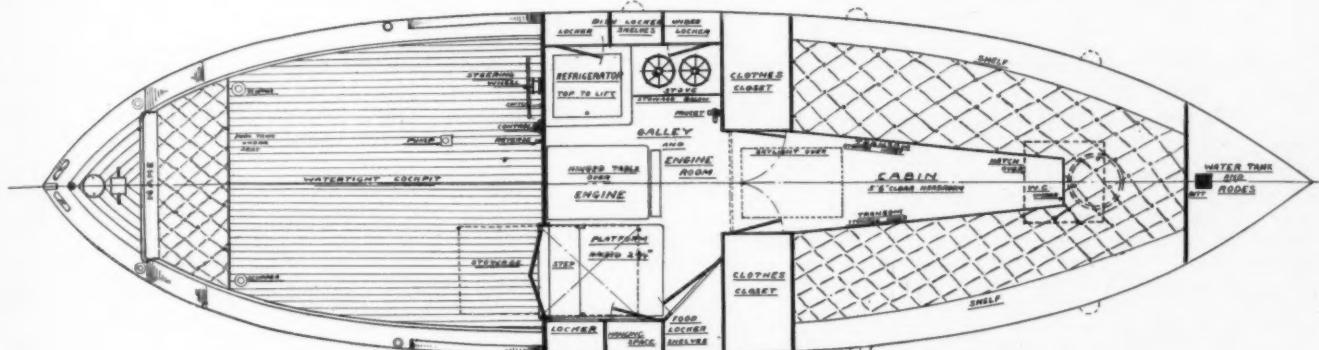
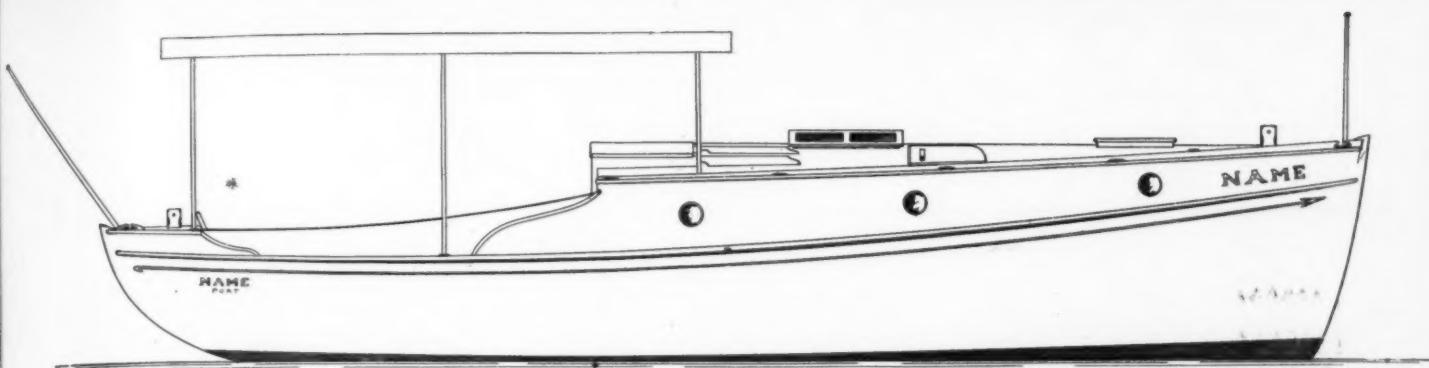
BELOW is shown the design of the Cooley Runabout, which contains all the good points of the Cooley Cape Ann Power Dory, but is somewhat faster and larger. The boat is built more upon the lines of the whale boat than the dory, but her lines have been greatly refined and with a 2-cylinder 12 H. P. Cooley motor she maintains a speed of 12 miles per hour.

It will be seen by the symmetry of the design fore and aft, the shape of the sections and liberal freeboard, that this model retains all the seaworthiness of its predecessor the whale boat, with a refinement that makes possible a speed unattainable with the broader, more bluff model of the latter.

The keel and frames are of white oak, the latter being $\frac{3}{8}$ inches square and spaced 8 inches between centers. The planking is of white cedar of liberal thickness and is copper fastened and riveted over burrs. The deck is of white pine strips and the coaming and interior finish are of oak finished bright.



The Cooley runabout is a refinement of the old whale-boat and is good for 12 miles per hour in almost any kind of weather.

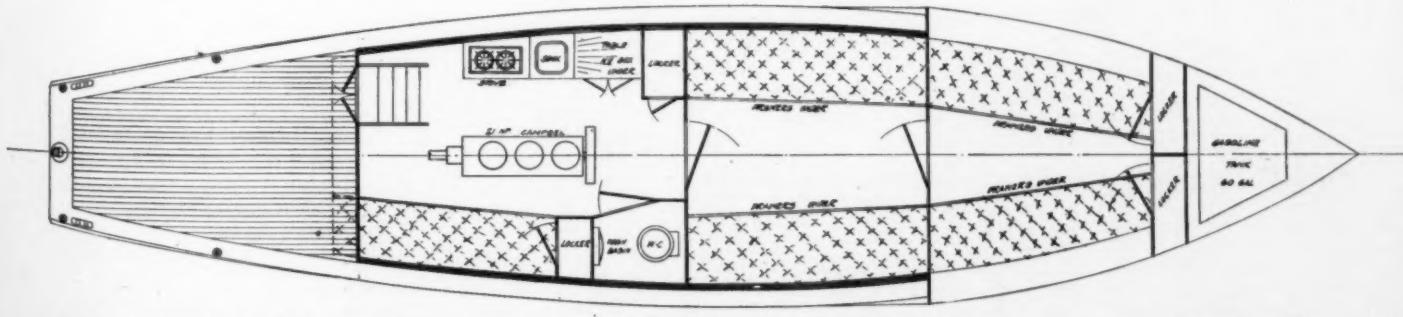
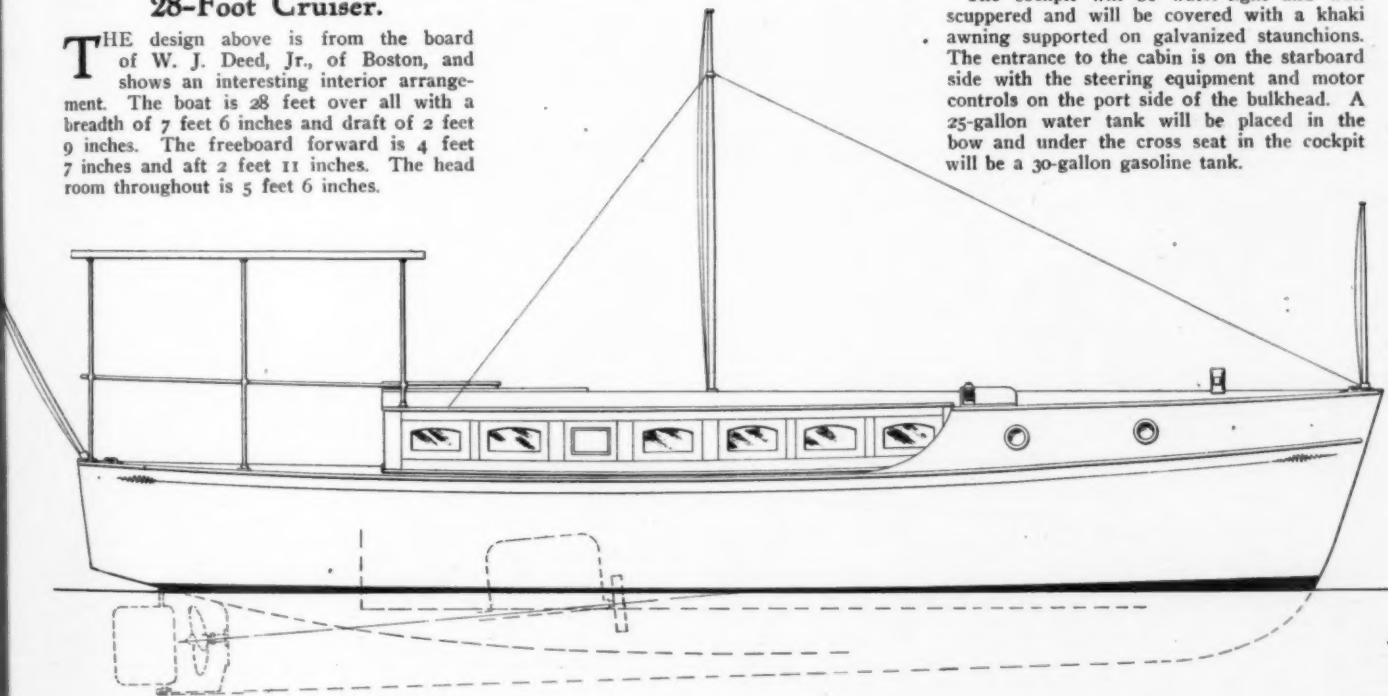


A seaworthy 28-foot cruiser of good draft designed by William J. Deed, Jr., of Boston.

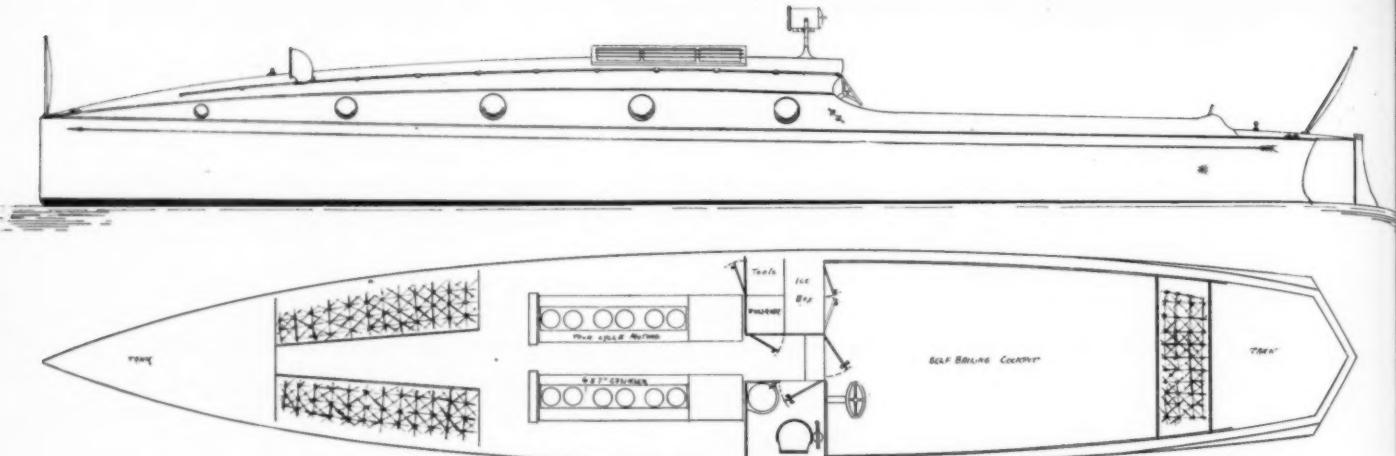
28-Foot Cruiser.

THE design above is from the board of W. J. Deed, Jr., of Boston, and shows an interesting interior arrangement. The boat is 28 feet over all with a breadth of 7 feet 6 inches and draft of 2 feet 9 inches. The freeboard forward is 4 feet 7 inches and aft 2 feet 11 inches. The head room throughout is 5 feet 6 inches.

The cockpit will be water-tight and well scuppered and will be covered with a khaki awning supported on galvanized stanchions. The entrance to the cabin is on the starboard side with the steering equipment and motor controls on the port side of the bulkhead. A 25-gallon water tank will be placed in the bow and under the cross seat in the cockpit will be a 30-gallon gasoline tank.



The 38-foot cruiser building at the Ruddock Boat and Yacht Works is equipped with a three-cylinder 21 horse Campbell motor. See description, page 30.



A fast 41-footer of $7\frac{1}{2}$ ft. beam designed by the Truscott Boat Co. She will be equipped with two 80 h. p. Truscott motors.

A New 38-Footer.

THE W. F. Ruddock Boat and Yacht Works have under construction a 38-foot flush deck cruiser, the profile and plan of which are shown on page 29. Her over all length is 38 feet, with beam of 8 feet 9 inches and extreme draft of 3 feet.

A 3-cylinder, 21 horsepower Campbell motor will furnish the power and will be installed in a compartment 9 feet 6 inches long, which also contains the galley and toilet. Forward of the engine room is the saloon, containing two berths, and forward of the saloon is a state-room 7 feet long, which also contains two bunks. A 60-gallon fuel tank is in the extreme bow. The after deck is surrounded by a galvanized iron railing and is covered with an 8-ounce canvas awning.

The interior of the boat is to be finished in mahogany and white enamel, a combination bound to produce an effective result. The windows in the cabin trunk are heavy plate

glass and are so fitted in mahogany sashes as to drop into pockets when open and to be water-tight when closed. The head room is 6 feet, 1 inch in the saloon and but slightly less in the state-room.

The frame of the boat is of white oak and the planking is of $\frac{3}{8}$ -inch white cedar, copper fastened to the frames, which are spaced on 12-inch centers. A $1\frac{1}{4}$ by 4-inch yellow pine clamp is run at the sheer line and being securely fastened to the frames and planking materially adds to the stiffness of the hull.

A military mast will be provided and will be so fitted as to be removable when necessary to pass beneath canal bridges and places of low head room. All deck hardware will be of polished bronze, and the rudder stock and blade are also of this material.

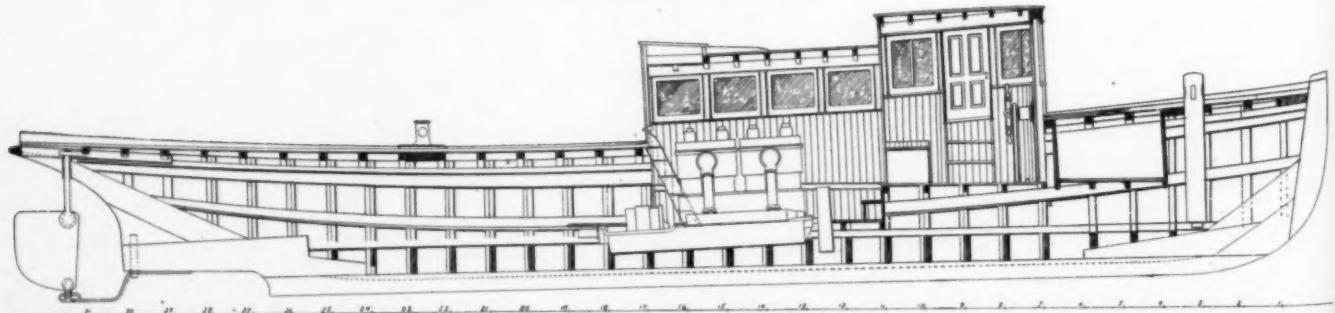
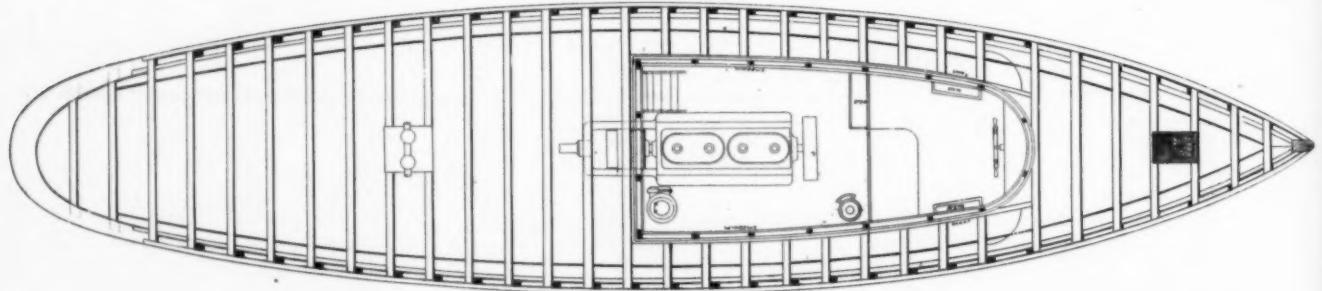
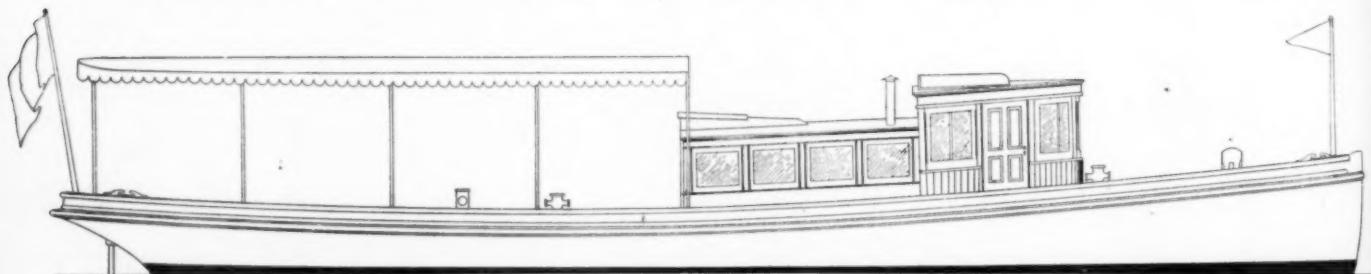
The six windows on each side of the trunk will, when lowered, give plenty of light and ventilation to both engine room and saloon and should make the interior comfortable in the hottest weather, and Mr. Newman, for

whom the boat is being built, should find her a most desirable boat for all service, where extreme shallow draft is not required.

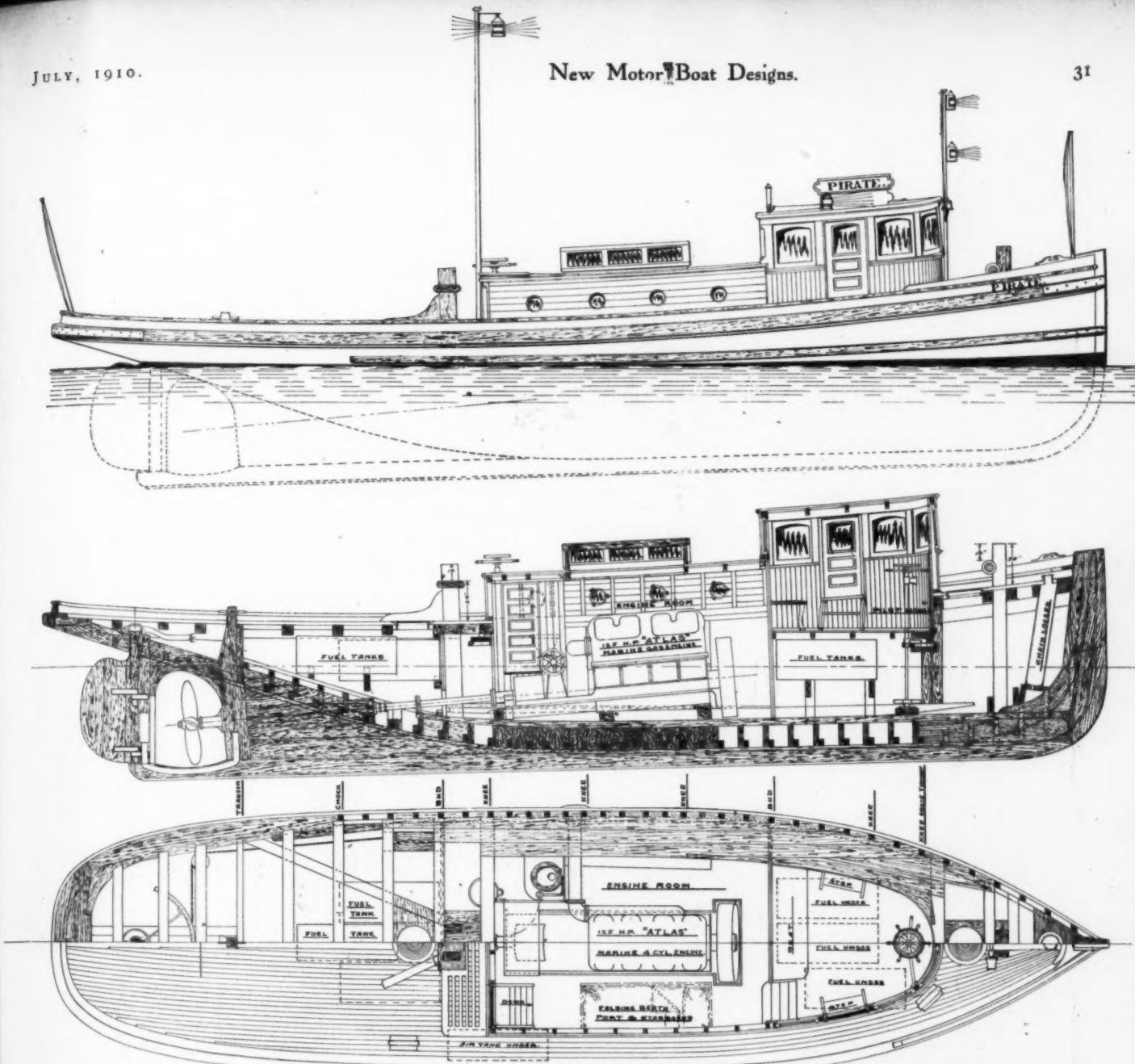
Gasolene Tug Broadwater.

BROADWATER was designed by L. J. Nilson and built by the Nilson Yacht Building Company, of Baltimore, Md., for the Pennsylvania Railroad Company, who will use her for towing barges and carrying freight among the several stations along the Virginia coast, making her home port Chincoteague, Va.

She is 50 feet over all by 11 feet 6 inch beam and her draft is 4 feet. Her engine is a four cylinder, 50 horse Standard which gives her a speed of twelve statute miles per hour, with her ordinary towing propeller. A glance at the design will serve to show the remarkably small space occupied by the power plant when compared to that required in the ordinary steam tug.



Broadwater, the 50-foot gasoline tug, designed by Mr. L. J. Nilson, is equipped with a 50 horse Standard, and is good for 12 miles.



The motor tug *Pirate* was designed by D. W. & R. Z. Dickie for the American Dredging Company, and was built by H. Anderson, of South San Francisco.

Gasolene Tug Pirate.

THE American Dredging Company's tow boat *Pirate*, which has lately gone into commission on San Francisco Bay, is one of the highest powered 15-ton boats in operation by one man on the Pacific coast.

Pirate was designed by D. W. and R. Z. Dickie, of San Francisco, and built by H. Anderson, of South San Francisco, and from the design it will be seen that strength and economy of construction were the foremost considerations. Every feature of the boat is business-like, plain and serviceably finished. It is neat in design and compactly arranged. Her principal dimensions are length over all, 52 feet 2 inches; beam, 13 feet 2 inches; depth of hold, 5 feet; sheer forward, 2 feet 9 inches; sheer aft, 9 inches; and freeboard 22 inches.

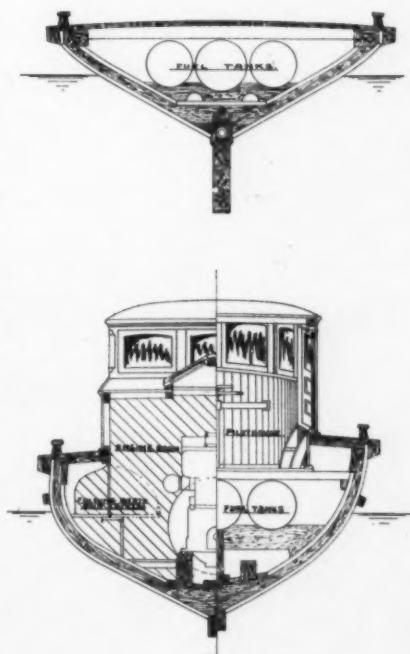
There is a pilot house forward, the floor of which is sunk somewhat below the deck, and extending aft from this is a lower trunk over the engine compartment. She has a straight stem and the usual fan-tail stern with a low bulwark and guard all round. The keel, planking and ceiling are of pine with oak stern, stem and frames. The joiner work is of pine with French plate glass windows in the pilot house and brass port lights in the sides of the engine compartment, arranged to open for ventilation. In the bow there is a forecastle fitted with shelves for stores, together with a chain locker, which is a galvanized iron pipe with patent deck fitting

all of which tends to keep the forecastle clean.

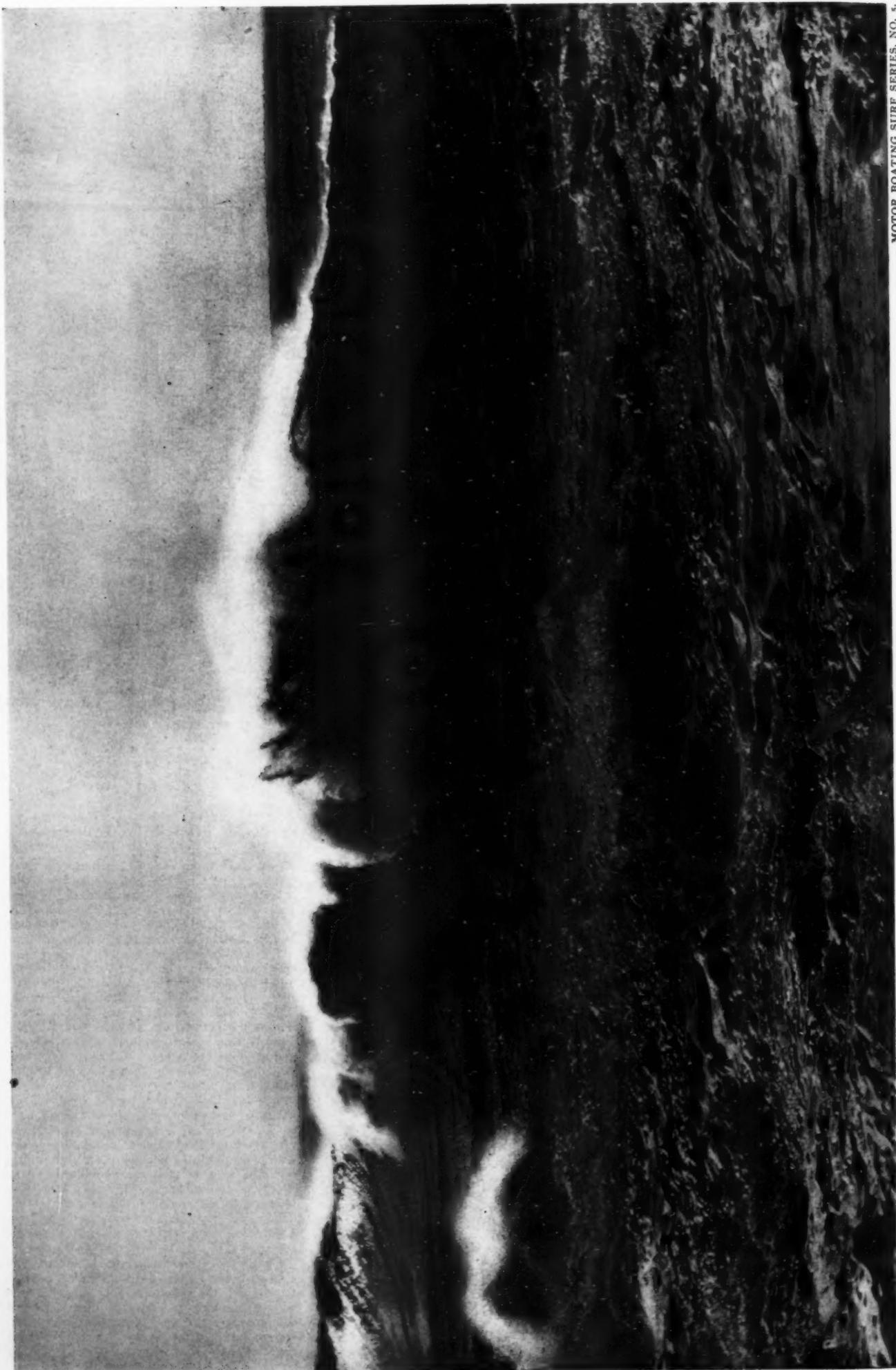
The engine room amidships is equipped with a berth on either side which, with the bedding folds out of the way when not in use. The engine is a four cylinder, 125 h.p. Atlas, built by the Atlas Gas Engine Company, of San Francisco, and it may be controlled either from the steering wheel in the pilot house or the auxiliary steering wheel mounted on the after deck. This is accomplished by means of the Atlas Control Gear which puts the boat easily within the control of one man at all times. The dynamo is forward on the port side together with the storage battery. The boat is lighted throughout by the Apple Electric Company's system.

The fuel tanks, which have a combined capacity of 800 gallons and which are arranged to feed by gravity, are placed beneath the after deck, and a complete ventilation system with pipes to all the holds, keeps a clear supply of air in all compartments, avoiding any possibility of an explosion. There is a large skylight above the engine for light and ventilation. The towing bits are very heavy and are backed by a system of bracing as shown in the design.

On the government measured mile on San Francisco Bay, a speed of 11.1 miles was obtained with the regular towing propeller and with the engine turning 350 r.p.m. and developing over 145 h.p. *Pirate* has proved herself an excellent tow boat and has fulfilled the expectations of her owners.



Pirate's sections show exceptional dead rise.



Photograph Copyright, 1910, by Edwin Levick.

The Charge.

MOTOR BOATING SURF SERIES, NO. 5.

Navigation for the Motor Boatman.

The Principles, Which if Mastered, Infinitely Increase the Possibilities of Motor Boating.
For the Motor Boatman Who Is Not Content to Hug the Shore.

Part IV.

By Capt. B. D. Reese.

The Logbook.

A CAREFUL account is kept of all the courses steered, the distances run on each, the direction of the wind, the amount of leeway, the variation, the deviation, the condition of the weather, what sail carried, the speed of the engine, and any other facts that may be of value in keeping a record of the vessel's position. All this data is entered in an official, properly arranged book, called the Logbook. There are usually two of them, one is used by the officers on watch to enter all facts as soon as possible after they occur. This is usually kept in pencil and is called "The Scrap Logbook." When a lighthouse or any headland is passed, its bearing and distance are carefully noted as a check on the reckoning. The other copy, or, "The Logbook" is kept by or under the supervision of the navigating officer who takes the scrap-log every day at noon and calculates from the entries in it the vessel's present position. This is called "Doing a Day's Work."

Usually the first entry in a specimen Day's Work given for practice is the latitude and longitude of some headland, with its bearing and distance from the ship. This is called the Departure Course. When correcting it the opposite point from the bearing is taken, as the ship must evidently bear exactly opposite from the land to what the land bore from the ship; thus if we are told that a point bore N. W. by W. from the ship, the ship must be S. E. by E. from the point. The direction of the ship's head at the time of taking the bearing is sometimes mentioned in the note. This means that lower down in the log you will find the course, and its deviation placed after it. You are supposed to take this deviation to correct the bearing.

All the courses given are corrected for deviation and variation, the leeway being allowed first, as we did before in the examples on correcting courses. The current is usually given, and it should be treated as an independent course. If it is mentioned as being "Correct Magnetic," or if nothing is said either way, correct it for variation, *but* if it is stated to be *true*, use it as given.

When the courses have all been corrected they are laid out in a tabular form and the differences of latitude and departure are taken out of Table 2 and placed in their respective columns opposite. The results are applied to the latitude and longitude left and the place she is in is the result. The course and distance made good is also taken out of the table for the distance latitude and departure found.

The following examples are worked out in detail, the student should work them out carefully and remember there is nothing to which the old proverb "Practice makes perfect" applies to more than the doing of a Day's Work.

Example I.

Cape Hatteras in latitude $35^{\circ} 15'$ N. and longitude $75^{\circ} 31'$ W. bore by compass W. S. W. distant 15 miles. Ship's head N. N. E. Deviation as per log.

Hrs.	Courses	Dist.	Winds	L'way	Dev.
4	N.N.E.	32	N.W.	$\frac{3}{4}$ pt.	7° E.
8	E.N.E.	29	N.	1° "	11° E.
12	N.	24	E.N.E.	$\frac{3}{4}$ "	3° E.
4	N. by E.	26	"	$\frac{1}{4}$ "	4° E.
8	E.	29	N.N.E.	$\frac{3}{4}$ "	13° E.
12	N.N.W.	36	N.E.	$\frac{3}{4}$ "	4° W.

REMARKS:
Variation 5° W.
A current set N.E. (true) $27'$ during the day.

Courses	Dist.	N.	S.	E.	W.	
N. 70 E.	15	5.1	...	14.1	...	Between (N. and E.) 0° and 90° the reading is the same.
N. 30 E.	32	27.7	...	16.0	...	Between (E. and S.) 90° and 180° subtract it from 180° .
N. 85 E.	29	2.5	...	28.9	...	Between (S. and W.) 180° and 270° add it to 180° .
N. 10 W.	* 24	23.6	...	...	4.2	Between (W. and N.) 270° and 360° subtract it from 360° .
N. 4 W.	26	25.9	...	...	1.8	
S. 76 E.	29	...	7.0	28.1	...	
N. 34 W.	36	29.8	...	...	20.1	
N. 45 E.	27	19.1	...	19.1	...	
			133.7	7.0	106.2	26.1
				7.0		26.1
N. 33 E.	150	126.7			80.1	

Latitude left...	35° 15' N.	Longitude left...	75° 31' W.
Diff. 127' =....	2° 7' N.	Diff. 99' =....	1° 39' E.
Latitude in....	37° 22' N.	Longitude in....	73° 52' W.
		2) 72° 37'	
Mid. Lat.....	36° 18 1/4'		

Remember the rule:—Take the middle latitude as a course and the departure in latitude column, you will find the difference of longitude in the distance column.

Example II.

Cape Henlopen in latitude $38^{\circ} 46'$ N. longitude $75^{\circ} 5'$ W. bearing by compass; west, distant 12 miles. Ship's head E. by S. Deviation as per log.

Hrs.	Courses	Dist.	Winds	L'way	Dev.
4	E. by S.	28	S. by E.	$\frac{3}{4}$ pt.	10° W.
8	S.S.E.	25	E.	$\frac{3}{4}$ "	3° W.
12	E.	19	S.S.E.	$\frac{3}{4}$ "	8° W.
4	S.S.W.	13	S.E.	2 "	3° E.
8	S.	10	E.S.E.	$2\frac{1}{2}$ "	1° E.
12	S. $\frac{1}{2}$ E.	12	E. by S.	$2\frac{1}{2}$ "	3° E.

REMARKS:
Variation 6° W.
A current set S. by W. (cor. mag.) 20 miles during the day.

Courses	Dist.	N.	S.	E.	W.
N. 74 E.	12	3.3	...	11.5	...
N. 80 E.	28	4.9	...	27.6	...
S. 23 E.	25	...	23.0	9.8	...
N. 73 E.	19	5.6	...	18.2	...
S. 42 W.	13	...	9.7	...	8.7
S. 23 W.	10	...	9.2	...	3.9
S. 16 W.	12	...	11.5	...	3.3
S. 5 W.	20	...	19.9	...	1.7
		13.8	73.3	67.1	17.6
		13.8		17.6	
S. 40 E.	77	59.5		49.5	

Latitude left...	38° 46' N.	Longitude left...	75° 5' W.
Diff. Lat. 60' =	1° 00' S.	Diff. Long. 63' =	1° 3' E.
Latitude in....	37° 46' N.	Longitude in....	74° 2' W.
	2) 76° 32'		
Middle Lat....	38° 16'		

The following examples may now be worked out in the same manner.

The Day's Work requires great care in doing it. No one will ever become expert enough to be careless with it.

The New Compass.

The bearings of all objects in the U. S. Light and Buoy Books are given in *Degrees and Minutes* (true), reading clockwise from 0° to 360° .

The bearings given in compass *points* are *magnetic*.

In the new compass, 0° is North
 90° is East
 180° is South
 270° is West
 360° is the same as 0° North

To convert compass points into the degrees in this system:

Take the equivalent degrees and minutes for the given point out of the usual 8-point table, and:

Between (N. and E.) 0° and 90° the reading is the same.

Between (E. and S.) 90° and 180° subtract it from 180° .

Between (S. and W.) 180° and 270° add it to 180° .

Between (W. and N.) 270° and 360° subtract it from 360° .

Thus—

N.W. $\frac{1}{4}$ N. = N. $42^{\circ} 11'$ W. $360^{\circ} - 42^{\circ} 11' = 317^{\circ} 49'$

S.S.W. = S. $22^{\circ} 30'$ W. $180^{\circ} + 22^{\circ} 30' = 202^{\circ} 30'$

N.E. by E. = N. $56^{\circ} 15'$ E. = $56^{\circ} 15'$

S.E. $\frac{1}{2}$ S. = S. $39^{\circ} 23'$ E. $180^{\circ} - 39^{\circ} 23' = 140^{\circ} 37'$

In applying the variation and deviation to the readings of the new compass, as the readings are all from North; the errors are to be used all one way. That is:

To find magnetic from true: Easterly subtract; Westerly, add.

To find true from magnetic: Easterly add; Westerly, subtract.

To use the *degree* bearings given in the Lighthouse Book on the compass, be sure and apply the variation; Easterly subtract; Westerly add. Then:

Between 0° and 90° the reading will be the same (N. and E.).

Between 90° and 180° subtract it from 180° (S. and E.).

Between 180° and 270° subtract 180° from it (S. and W.).

Between 270° and 360° subtract it from 360° (N. and W.).

Thus if the given bearing in the book is $147^{\circ} 20'$; and the variation is 7° W. Adding the variation will give $154^{\circ} 20'$. Now subtract this from 180° and we have $25^{\circ} 20'$ (S. and E) or S. S. E. $\frac{1}{4}$ E.

To do a Day's Work by the new compass is much simpler than by the old compass with its four quadrants and its points and quarter-points. The time will soon come when the old Mariner's compass will be as great a curiosity as the old fashioned hour glass, and the sooner the better.

If the courses are given by the new compass, the rules for correcting them become straight adding or subtracting, instead of the present confusing manner of having to change them for each alternate quadrant.

Rule to correct courses by the new compass:

Leeway, port tack, add; starboard tack, subtract.

Variation, Easterly, add; Westerly, subtract.

Deviation, Easterly, add; Westerly, subtract.

When finding the course to steer from a true or magnetic course reverse the above rule.

When the courses are given in *points*, change them into *degrees* by the rule given above, and proceed as just directed. After the courses have been corrected you will find that there are four different angles given at the top and bottom of each page in the Traverse Table. Find the one you require, then:

Mark your traverse, instead of N. S. E. W. with $+$ $-$ $+$ $-$; and if your course is

Between 0° and 90° or 270° and 360° the Diff. Lat. is $+$.

Between 90° and 270° the Diff. Lat. is $-$.

Between 0° and 180° the Departure is $+$.

Between 180° and 360° the Departure is $-$.

The rule may also be stated in this way:

Make a vertical cross to represent the intersection of a meridian and a parallel on the chart, then:

All lines running upward are $+$

All lines running downward are $-$

All lines running to the right are $+$

All lines running to the left are $-$

The Day's Work given on the following page should now be worked out by both methods. The answers are given in both systems.

Example III.

Hrs.	Courses	K.	Winds	L'way	Dev.
4	S.S.W.	36	West	1 1/2 pt.	9° E.
8	W.B.N. 1/2 N.	27	S.W.	2 " "	7° W.
12	West	29	S.S.W.	1 1/2 " "	3° W.
4	N.W. 1/2 W.	33	W.S.W.	3/4 " "	9° W.
8	S.b.W. 1/2 W.	17	West	3/4 " "	7° E.
12	S.W.b.S.	23	W.b.N.	3/4 " "	5° E.

REMARKS:
A point in Lat. 39° 30' N., Long. 5° 15' E., bore E.N.E. dist. 14', Dev. 9° E.
Var. 15° E.
A current set West (cor. mag.) 32 miles during the day.

Example IV.

Hrs.	Courses	K.	Winds	L'way	Dev.
4	E.S.E.	44	N.E.	1 1/4 pt.	7° E.
8	S.E. 1/2 E.	38	E.N.E.	1 " "	9° E.
12	E.N.E.	27	S.E.	3/4 " "	3° E.
4	East	35	S.S.E.	3/4 " "	5° E.
8	N.E.b.E.	33	S.E.b.E.	3/4 " "	1° E.
12	South	29	E.S.E.	1 1/4 " "	2° W.

REMARKS:
Nantucket Shoals L. V., Lat. 40° 37' N., Long. 60° 37' W., bearing by Compass W.N.W., dist. 10 miles. Ship's head E.S.E.
Var. 10° W.
A current set E.b.N. (cor. mag.) 21 miles during the day.

Example V.

Hrs.	Courses	K.	Winds	L'way	Dev.
4	S.E.b.S.	40	S.W.	3/4 pt.	3° W.
8	"	43	"	3/4 " "	3° W.
12	"	41	"	3/4 " "	3° W.
4	S.S.E.	44	West	0 " "	4° W.
8	"	46	"	0 " "	4° W.
12	"	44	"	0 " "	4° W.

REMARKS:
Sea Girt Lighthouse, Lat. 40° 08' N., Long. 74° 02' W., bore N. W. 10 miles. Ship's head S.E.b.S.
Var. 8° W. noon to mid. Var. 7° W. mid. to noon.
A current set South (cor. mag.) 12 miles during the day.

Example VI.

Hrs.	Courses	K.	Winds	L'way	Dev.
4	S.W.b.W. 1/2 W.	17	N.W.	3 pt.	9° W.
10	W. 1/2 N.	21	S.S.W.	2 1/2 " "	12° W.
2	S.W. 1/2 S.	15	W.N.W.	1 1/2 " "	7° W.
5	W.b.N. 1/2 N.	12	S.W.	2 1/4 " "	10° W.
9	S.S.W.	10	West	2 " "	3° W.
12	W.b.S.	9	S.b.W.	2 1/2 " "	10° W.

REMARKS:
A point of land in Lat. 51° 20' N., Long. 0° 27' E., bore N.E. 1/2 E. 15', Dev. 19° W.
Var. 23° W.

Example VII.

Hrs.	Courses	K.	Winds	L'way	Dev.
4	S.b.E.	34	E.N.E.	1/2 pt.	5° E.
8	E. 1/2 N.	25	S.E.	3/4 " "	14° E.
12	S.E.b.E. 1/2 E.	26	S.b.W.	1 " "	19° E.
4	S.E.b.S.	29	S.W.b.S.	1 " "	9° E.
8	N.E. 1/2 E.	30	S.E.b.E.	3/4 " "	8° E.
12	S.b.W.	30	"	3/4 " "	3° W.

REMARKS:
Montauk Point in Lat. 41° 04' N., Long. 71° 51' W., bore N. 34° E. 14 miles. Ship's head S.b.E.
Var. 35° W.
A current set W.b.N. (cor. mag.) 36 miles during the day.

Example VIII.

Hrs.	Courses	K.	Winds	L'way	Dev.
4	N.N.W.	48	West	1/2 pt.	12° E.
8	N.E.	42	E.S.E.	3/4 " "	22° E.
12	S.E. 1/2 S.	48	S.S.W.	3/4 " "	19° W.
4	S.b.E. 1/2 E.	35	E.b.S.	3/4 " "	14° W.
8	N.b.E.	35	E.b.N.	1 " "	18° E.
12	E.b.N.	49	S.E.	3/4 " "	15° W.

REMARKS:
A point of land in Lat. 39° 16' N., Long. 177° 58' E., bore W.b.S. 21 miles. Ship's head N.N.W.
Var. 15° E.
A current set N.E.b.E. (cor. mag.) 36 miles during the day.

Answers to Days' Works.

3. N. 28° W. 14'; S. 30° W. 36'; N. 43° W. 27'; N. 64° W. 29'; N. 10° W. 33'; S. 39° W. 17'; S. 48° W. 23'; N. 75° W. 34'; Course N. 82° W. Dist. 144'; Diff. Lat. 67'; Dep. 156.0'; Lat. in 39° 57' N.; M. Lat. 39° 53'; Diff. Long. 186'; Long. in 1° 48' E. 4° S. 71° E. 10'; S. 56° E. 40° E. 38° W. N. 52° E. 27'; N. 79° E. 35'; N. 44° E. 33'; S. 2° E. 29'; N. 69° E. 21'; Course S. 79° E. Dist. 170'; Diff. Lat. 31.5'; Dep. 167.6'; Lat. in 40° 5' N.; M. Lat. 40° 21'; Diff. Long. 219'; Long. in 56° 58' W. 5° S. 56° E. 10'; S. 50° E. 123'; S. 34° E. 134'; S. 8° E. 12'; Course S. 41° E. Dist. 275'; Diff. Lat. 207.9'; Lat. in 36° 40' N. M. Lat. 38° 24'; Diff. Long. 227'; Long. in 70° 15' W. 6° S. 9° W. 15° S. 4° E. 17'; S. 89° W. 21'; S. 7° E. 15'; N. 81° W. 12'; S. 26° E. 10'; S. 74° W. 9'; Course S. 29° W. Dist. 62'; Diff. Lat. 56.7'; Lat. in 50° 23' N.; M. Lat. 50° 51'; Diff. Long. 57'; Long. in 30° 30' W. 7° S. 22° E. 14'; S. 36° E. 34'; N. 55° E. 29'; N. 88° E. 26'; S. 71° E. 29'; N. 18° E. 30'; S. 24° E. 30'; S. 66° W. 36'; Course S. 36° E. Dist. 60'; Diff. Lat. 48.2'; Lat. in 40° 16' N.; M. Lat. 40° 40'; Dep. 87.7'; Diff. Long. 116'; Long. in 69° 55' W. 8° S. 74° E. 21'; N. 10° E. 48'; N. 74° E. 43'; S. 49° E. 48'; S. 7° E. 35'; N. 33° E. 35'; N. 76° E. 49° E. 49° E. 48'; S. 71° E. 36'; Course N. 79° E. Dist. 214'; Diff. Lat. 39.6'; Dep. 210.6'; Lat. in 39° 56' N.; M. Lat. 39° 36'; Diff. Long. 274'; Long. in 177° 28' W.

The courses in the above Day's Works expressed in the modern compass are as follows:

3. 272°; 210°; 317°; 296°; 321°; 219°; 228°; 285°; Course 278°. 4. 109°; 124°; 140°; 52°; 79°; 44°; 182°; 69°; Course 101°. 5. 124°; 130°; 146°; 172°; Course 139°. 6. 180°; 176°; 269°; 173°; 279°; 154°; 254°; Course 209°. 7. 158°; 144°; 55°; 88°; 109°; 18°; 156°; 246°; Course 164°. 8. 106°; 10°; 74°; 131°; 173°; 33°; 76°; 71°; Course 79°.

It would be excellent practice for the student to work these examples out by both methods, but if he can really can master one of them he will be well equipped for "Dead Reckoning."

Choosing a Name for the Motor Boat.

A Good Boat Worthy of a Name That Will Distinguish Her From the Others.
Many Popular Appellations Worn Threadbare and Lack Individuality.

By Allan O. Gold.

"WHAT'S in a name?" inquires the Bard of Devon. We beg to reply that in the names of some of our power craft there is displayed much ingenuity and good taste. In a vastly greater number of cases there is, alas, nothing to distinguish one craft from another among the almost half million other motor boats in United States waters, nearly all of which rejoice in a name of some sort or other. Not that it is a simple undertaking to choose a good name for a boat. Far from it, with thousands of the most natural and perhaps desirable names already monopolized by existing craft. But the fact remains that a good boat is worthy of a suitable name and the choice of an appellation not already inscribed on the sterns of a hundred or two other craft is an achievement well worth trying for.

In the List of Merchant Vessels of the United States one beholds scores of names all exactly alike. Craft of all sorts and sizes and hailing from half the ports on the Atlantic, Pacific and Gulf bear the euphonious name of Josephine; Julia is another strong favorite and nearly all the names that appear to be at all desirable are worn threadbare. Feminine names have always been very popular for vessels, but quite naturally the supply of vessels has always greatly outnumbered the available list of such names. A variation frequently used in the first name coupled with an initial of the middle or last name, as Doris B. Repetition is in this case much less likely to occur.

Names of sea birds are appropriate but as might be expected are widely used. Such names as Curlew, Petrel, Albatross, etc., are often noticed. Later craft have varied this line of names by adding a distinguishing word

as Gray Duck, Wild Goose, etc. Fish have suggested names for countless boats, Dolphin being a favorite of long standing, and these names would all be more or less desirable if individuality were possible. Some recent power craft bearing the names of fish are Tuna, Tarpon, Graying, Mackerel, etc. Many odd names are coined from the owner's own name reversed or used with an added syllable. One of these coined names and a very good example too, is Friendship, a name now being painted upon the ninth of Mr. Harry Friend's craft, a sixty-five-footer now nearing completion at the Adams yard, East Boothbay, Maine. In the same building is Mahdeen IV, whose name savors of the romance of the Orient, until we learn that it is merely the family name of her ingenious owner, Mr. A. C. Needham, reversed.

When yachtsman is building a craft of some pretensions he is commonly very painstaking in his search for a name and endeavors to have the dignity of the yacht properly upheld by her name. Lysistrata, the name borne by Mr. Jas. Gordon Bennett's palatial ocean going steamer, would sound ridiculous if applied to a small open launch, while names like Fraid-cat, Prickly Heat, etc., would ill become any boat with more dignity than a power tender. Many Indian names will be found among the motor boat fleet, and these have for years been popular among sail yachts and other craft. Seminole, Osceola, Mohican, Iroquois and Seneca are all excellent names, and there are countless others as good. The Norse mythology has furnished us with names like Valkyrie, etc., while Viking is always well represented in the yacht list.

In naming racing yachts the contest for

which they are being built often suggests an appropriate name. Dixie, a distinctly American name, is well suited to an international cup defender as also is U. S. A. Challenger was a name borne by a speedy craft that went abroad a few seasons back to try for the Harmsworth Cup.

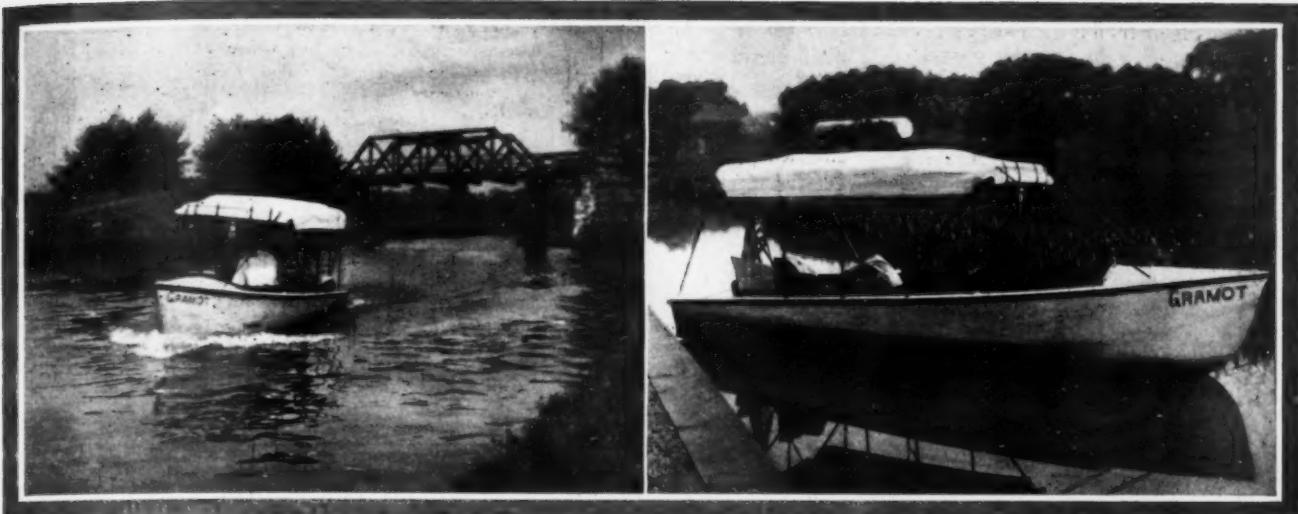
Seafarer is a particularly happy selection for a powerful auxiliary schooner which is just now entering upon a round-the-world voyage of 8 months duration.

Names of East Indian origin, such as Sepoy and Lasca, are good and there are doubtless many others in the fascinating tongues of the Far East that have never been used in American waters.

Some names have been used which invite an explanation and are meaningless without it. Such names are Hard Boiled Egg and Blue Peter. The former is supposed to be "hard to beat" while the latter is "always to the fore."

In choosing a name it should be remembered that long fanciful names whose origin are obscure are difficult to remember even though their sound is agreeable to the ear. The preference should be given to a name of medium length which has an individuality causing it to stick in the memory of those who have once heard it.

On motor craft the name should be painted in distinct letters on both bows and upon the stern. The hailing port should also appear upon the stern beneath the name. In addition the name is usually placed upon the life-boards and canvas wheel-cover. The screen-boards of the side lights offer a good opportunity to display the name forward. Be sure that the letters are large enough to be visible at a reasonable distance.



Gramot under way and at rest. She is a good boat for general use on protected waters.

Three Hundred Dollar Motor Boats.

The Third Instalment of the Series "How Much Does a Motor Boat Cost?" Boats Built or Bought for \$300 or Less. The Engines for Them.

This month's instalment of the Cost Series deals with boats that may be bought or built for prices ranging from \$200 to \$300. Last month the \$100-\$200 boat was considered and next month we will get an idea of what may be had for from \$300 to \$500. After that we will continue by stages until the \$100,000 production has been reached.

Again we wish to emphasize what we have said already, that we want the owners of motor boats, and we want the trade, manufacturers of complete motor boats and makers of engines, to send us at once photographs and descriptions of the boats or engines that they own or manufacture so that they may be included in this series; and we want them

to send this material now. We want this Cost Series to be of the utmost value to all motor boat men and prospective motor boat men. We don't want anyone left out, but we cannot draw upon our imaginations for material that is not sent us.

Mr. Owner: Send us a photograph of your boat with her description, tell us how you like her, and why. Remember that WE PAY SPACE RATES, the same that we pay our regular contributors, for all material used, excepting that sent in by manufacturers. If you have a boat that cost you above \$300, no matter how much, send us her photograph and description and do it NOW.—EDITOR.

Double Planked Speed Boat.

Gerald T. White, New York City.

FOR the man who has \$300 to spend on a boat, and who wants as much speed as possible, a boat to the following specifications will certainly prove satisfactory. The hull is 22 feet long and has a beam of 3 feet 6 inches and draws about 18 inches at the wheel and about 9 inches at the stem.

The boat is constructed on the double planked method with longitudinal stringers and transverse bulkheads in place of the usual timber construction. The stringers are run around the bulkheads and then a layer of $3/16$ inch planking is bent around them transversely and covered with canvas, after which the outer layer of $3/16$ inch planking is put on lengthwise in the same manner that an ordinary carvel boat is planked. The bulkheads are six in number and are made of two layers of $1/4$ inch material and riveted together. There are four stringers to a side, 1 inch by $3/4$ inch in size and one clamp $1\frac{1}{2}$ inch by $3/4$ inch.

The engine for this boat should develop about 6 h.p. at 750 r.p.m. and should not weigh over 200 pounds complete. An itemized list of materials follows:

Keel	\$ 1.25
Stem	4.00
Stringers	2.00
Bulkheads	2.25
Planking	16.00
Decking	5.00
Mouldings	3.00
Seats and floor	4.00
Engine bed	2.00
Canvas	5.00
Paint and varnish	5.00
Tank and piping	10.00
Fastenings, etc.	10.00
Fittings	25.00
<hr/>	
Hull complete	\$94.50
Engine	\$200.00
<hr/>	
	\$294.50

Dandy—A \$280 Cruiser.

"W." Savannah, Ga.

I HAD just about \$275 to invest in a boat and I wanted the biggest boat possible for the money. I wanted a cruiser. Having neither the time nor place in which to build one myself, I wended my way one Sunday to the shop of an old boat builder who, although he worked slowly and on a small scale, turned out out very good boats at reasonable prices.

After much talking and sketching we decided on a boat of the diamond bottom type which is altogether satisfactory for rough southern use. She is 24 feet over all by 6 feet 6 inches beam and draws about 2 feet 4 inches, including heavy skeg to protect the wheel. Her raised deck extends to a point the length is devoted to a cockpit with lazy back seat across the after end, and a short after deck. In the eyes is located the chain locker just aft of which is a water tank with pipe connections to the rear of the cabin. Between the tank and the cabin bulkhead is a large closet with hanging space for clothing. The cabin is about nine feet long and contains a



The 20-foot power dory described by Mr. Fiske is an embodiment of all the qualities required in an all-round boat.

berth on either side. The companionway to the cockpit leads from the starboard side and a small two burner stove and locker occupy the corresponding space to port. The engine is just aft of the rear cabin bulkhead, extending somewhat above the cockpit floor and is housed over by a removable box. The boat is strongly built and plainly finished throughout and has proved herself both comfortable and seaworthy.

From previous experience of its reliability I decided on a Mianus motor of 5 horsepower, and she has lived up to her reputation in every way, giving splendid satisfaction and driving the heavy hull at the rate of 7 miles per hour. A detailed summary of the cost of the outfit is as follows:

Boat complete with fittings painted and ready for the engine and interior equipment	\$112.00
5 H. P. Mianus with complete equipment	132.25
Pipe, fittings and installation	9.00
30-gallon galvanized tank with fittings	5.50
Anchor, ropes and canvas cushions	17.75
Two-burner oil stove and small ice box	8.10
Total	\$284.60

Gramot—a 16-Footer.

Adam S. Lenhart, Hamburg, Pa.

GRAMOT, shown in the illustration, is the type of boat that I am turning out complete for \$250. She is 16 feet long by 4 feet 6 inches beam, her depth at bow being 26 inches and at stern 14 inches. Equipped with a 6 h.p., 2-cylinder Gray motor turning a Bryant and Berry speed wheel 14 inches in diameter by 16 inches pitch, her speed is 9 miles per hour. The hull is constructed of white pine planking securely fastened to oak frames, and the entire hull is covered with 12 ounce duck which takes a splendid finish. She seats nine persons and is equipped with electric lights. Pictures of Gramot at rest and under way are shown at the top of the preceding page.

The Power Dory.

George Fiske, Boston, Mass.

THE little boat which I will describe was bought in 1908 and is consequently now entering upon her third summer in service. She is Boston born and bred, the product of one of the most famous builders of power dories in New England, and its brothers and sisters are to be met with in all the corners of the earth. The government itself has seen fit to order many of this firm's output for its service at Panama, in the navy and for the Lighthouse Commission. Particularly have they been successful in the field of life-saving work.

My boat, which I named Cautantowit, after the Indian god of Heaven and the Southwest wind, is used in Long Island Sound waters and its home port is Guilford, Conn., near which charming old spot I spend my summer vacations. I can guarantee that any man who wishes to secure an amount of pleasure beyond estimation, greater than any money value he could figure out—if he is a lover of the sea and as Motor BOATING so truly put it in a recent number, "Who is not a lover of the sea?"—let him invest in a small motor dory. They are "world-beaters" for sea boats; they can run up onto almost any beach at almost any tide; they are easily handled in smooth or rough water; with a spray hood you can defy any amount of the "briny" (and if you are a "sport" you'll very seldom want the hood up anyway); they are practically noiseless; you have the feeling of being almost a part of the wonderful sea, because you are so near it—but really, I didn't start in to tell you of the beauties of the dory type, but something about the cost of such a boat. The photographs will give you some faint idea of what there "is in it" for the lover of nature and of the sea in all its moods.

In the winter of 1907-1908 I got the motor boat fever in malignant form, though the previous summer I had had a slight touch of it with my Pete, a 16 foot St. Lawrence skiff

with one horsepower engine—but that's another story—a "\$100 boat" story, and we're after bigger game.

Well, the question was finally settled and the momentous purchase was made. Boat and engine were previously exhibited in the Boston Show of that winter and had especially attracted my admiring attention for their fine lines, shipshapeness and apparent promise of serviceability. As it turned out, my premonition happily came true in every sense.

The boat itself is twenty feet long over all, beam five feet three inches, with high sides. All frames, binders, stem, backboards, coamings, rubbing moulding, deadwood and skeg are oak. The binders are steam bent and were put in hot between the frames to strengthen the boat. The planking is of Eastern pine, four to seven laps to a side. All laps are clinched with chiselled pointed, galvanized nails in the form of a hook, making a tight joint without calking. The bottom seam is calked with cotton. All fittings are of brass.

All nails, screws, rivets and bolts are galvanized. The floor racks and interior finish are pine, the deck of oak, the seats of cypress, natural finish. At the time of purchase and also before the time of delivery the boat was treated to two coats of varnish, lead inside and outside, inside tinted and outside marine white.

The coaming, locker tops at the side of the engine, rubbing mouldings, and decks are of oak, while the seats, top of stem and backboard are finished in the natural wood, filled and varnished. The rudder and shoe are galvanized and extra heavy. The tiller is brass.

The boat is built lapstrake and has yet to give me any trouble from a leak of any kind. The engine is packed well aft with raised lockers on each side. Back of the engine there is a space for a seat and this has been found to be most convenient, as one can thus survey the course ahead and at the same time keep tab on the engine. The "better half" doesn't care much for this seat, as it's rather difficult to negotiate a passage past the rapidly revolving flywheel. She prefers to guide our destinies from her proud post as helmsman, "up forward at the wheel."

The boat steers by wheel aforesaid, but the "engineer," when alone, has been known to sit in his "lazy back" seat aft of the engine and direct the cavitating Cautantowit by hand power. This does not look quite so "finished," but is mighty handy when one's alone.

There are open lockers under each side seat. These lockers have proven far more serviceable than the raised lid type would have done. One can see just what one wants to get and get it in a second.

There are no cushions for these seats, as I have no use for them in an open boat; salt water is no respecter of cushions. Besides, they're only in the way, especially if you're on a fishing trip.

There are two flag poles fitted to brass sockets. The poles were included in the general equipment at the time of purchase. There are a couple of brass chocks fore and aft, also cleats, and the cover of the opening leading to the gasoline tank is also of brass.

The tank is galvanized and holds fifteen gallons, the feed pipe leading from there under the port seat to the engine. The space beneath the tank and the forward deck and out under the wheel is very convenient for storage. Here I have placed my whistle (also of brass), screwed to the floor rack and operated by hand. This whistle, by the way, proved a great attraction to all the youngsters (and some of the oldsters) whom we have been glad to entertain on board our "yacht."

Behind the whistle up under the tank is very handy storage room for horn, lights, and bell, and (don't forget this!) two (2) copies of the Pilot Rules. At the time of the writing of this article the "Life Preserver" Bill before Congress has not been passed. Of this bill too much cannot be said (take that any way you like!) But if it has passed, you may be sure yours truly will comply with it, if he has to trail a string of seven or eight life

preserver "doughnuts" out astern. I don't really know where else I'll put them.

In one of the lockers forward is stored a Dirigo folding anchor of twenty pounds weight, with about 100 feet of rope.

The lights are galvanized, port, bow and starboard and there is also, of course, the stern or anchor light. These are all in accordance with the law, and though the "Inspector" (dread personage!) has never happened to call my way, I'm not afraid to make his acquaintance at any time.

The spray hood is attached to the boat, and may be either folded on deck, used as a sun canopy or for its own special purpose as a protection from flying water. The bows of the hood are of ash and the fittings of brass. The sides can hook up, forming an awning. The hood is made of khaki.

In the lockers under the other seats (there are six of these lockers in all) are stored all sorts of useful things, such as rope, bilge pump, sponges, cotton waste, fenders, oil cans, etc.

The floor space is divided into three compartments, each filled by a removable latticed floor rack. This is a very great convenience and gives an added air of trimness.

The most useful lockers are those aft, each side of the engine. Each of these I have covered with oilcloth. This is especially necessary with the starboard locker, which contains the batteries and spark coil. I use two sets of dry batteries, Columbia No. 6, in a set, and they usually last me almost through the season. The other locker I use as a sort of tool chest, containing wrenches, pliers, files, scissors, emery paper, extra parts, gasoline funnel and "Heaven knows what all," says the smiling "Captain."

In the equipment with the boat were included the brass steering wheel, chocks, cleats, rowlocks and sockets, the ringbolt for mooring, a pair of oars, the rudder lines and guides, a set of floor racks, a funnel, two wrenches, a can of engine oil and a can of grease.

Now for the engine—the heart, lungs, stomach, liver, and "lights" of the boat. "It is of the make-and-break type and neither rough water, spray nor rain will put it out of commission," so says the catalogue, and the catalogue speaks the truth—mirabile dictu! I have yet to see the time when my little chugger has been put out of business by water in any form.

In the first place, the engine bed is of unusually heavy construction, being bolted through the bottom with galvanized bolts, thus practically eliminating the vibration. One reason leading me to the consideration of this particular make of engine was its advertised "Simplicity," and on investigation I found the statement true and have never had reason to question it. It is a "there and back" engine, I go and I return (the same day).

The engine is three horsepower and can push the boat about seven per. It is make-and-break, two cycle, two port. The pump and spark rod are worked by the same eccentric. The circulating water is carried down with the exhaust and serves two purposes; first, to decrease the noise and second, to kill the odor. The muffler tends still further to diminish the evidence that there's a motor aboard. The finish of the engine is black enamel, with polished brass head and fittings.

The sparkler has platinum points, spark changing lever on front, crankshaft, ball bearing thrust, water jacketed head, and flexible coupling—all included in the specifications. The complete fittings included shaft, propeller (3-bladed, 17 inch of Tobin bronze), shaft bearing, pump, connections, muffler (rendering the noise almost inaudible). The boat has received many compliments on this score), coupling, switch, batteries (full set of twelve), coil, wires and wrenches.

The engine is reversible and starts very easily, generally on a couple of flips of the flywheel. A vaporizer was furnished with the engine and after the first adjustments it has given little or no trouble. I do not see where (Continued on page 50.)

Boats That Sell for Less Than \$300.

The boats illustrated and described on this page are regular stock models that may be bought for less than \$300 and we have endeavored to include herein all boats on the market that come within this figure. Next month we shall describe those selling for from \$300 to \$500, and the manufacturers of such boats are requested to send us at once photographs and descriptions of them to insure their being inserted.—EDITOR.

The Waterman Launch with canoe construction.



The 18-foot Pierce equipped with 3-horse motor.



The Pope Special, a 22-footer.



The 18-foot Defoe equipped with 3-horse motor.

The Waterman Canoe Launch.

WATERMAN MARINE MOTOR COMPANY, Detroit, Mich. Among the boats and canoes produced by this company is a special speed boat of the usual canoe construction, only somewhat heavier and built along the lines of the speed boat. The length is 20 ft. over all and the beam 3 ft. 3 in. Equipped with a K-2 3 H. P. motor, this model sells for \$250. With the K-2, 2 cylinder, 4 1/2 H. P. motor the price is \$300, and with the A-4 the price is \$275.

22 Ft. Pope Special.

POPE BOAT COMPANY, Fond du Lac, Wis. The dimensions of the boat shown in the illustration are: Length over all 18 ft., beam 4 ft. 6 in., extreme draft 20 in.; least freeboard 20 in. The cockpit is 12 ft. in length, leaving a long turtle deck forward. The boat may be had completely equipped with all necessary fittings but without engine, for \$175. With a 3 H. P. Ferro Special the price is \$247; with a 4 H. P. Ferro, \$277.

18 Ft. Defoe.

DEFOE BOAT & MOTOR WORKS, Bay City, Mich. This 18-footer has a beam of 4 ft. 2 in., freeboard forward 26 in., aft 19 in., draft 18 in. It will carry six or eight persons, and with a 3 horse motor will attain a speed of 8 1/2 to 9 miles per hour. The frames for this boat may be had for \$30, and the boat complete, without motor, sells for \$165.

The Pierce 18-Footer.

PIERCE MOTOR COMPANY, Racine, Wis. The boat shown in the illustration is equipped with a 3 H. P. motor and reverse gear, cushions, salt water fittings and fastenings, polished brass deck rails and flags and poles. The motor is a 3 H. P. of 4 in. bore and stroke, and the price of the outfit complete is \$300. The 16 foot launch is also equipped with a 3 H. P. engine and reverse gear, and, with the complete equipment, sells for \$250.

Hand V-Bottom No. 231.

W. H. HAND, JR., NAVAL ARCHITECT, New Bedford, Mass. This is a 22 ft. racer with which a speed of over 20 miles per hour is entirely practical with a light two-cycle motor delivering about 20 horse-power. Beam is 4 ft. 2 in. and the draft 11 in. The materials for the construction of the hull cost in the neighborhood of \$50, and the complete plans, specifications and building directions may be had from Mr. Hand for \$7.50.

Mullins 18-Footer.

THE W. H. MULLINS COMPANY, Salem, Ohio. This boat is of the Mullins steel construction and equipped with a 6 horse-power, 2-cylinder Mullins 2-cycle reversible engine. The speed is from 9 to 10 miles per hour. The boat is equipped with water-tight bulkheads, making it absolutely safe. The decks are canvas covered with oak trimmings. The Mullins under-water exhaust is installed, and price is \$250 complete.

20 Ft. Monarch.

THE MONARCH TOOL & MANUFACTURING COMPANY, 120 Opera Place, Cincinnati, O. This boat is equipped with a 6 H. P. engine, and sells complete for \$250. It is built for comfort as well as speed, and will seat 6 to 8 people and maintain a speed of about 10 miles per hour. This company makes an 18 foot boat, which, equipped with a 4 H. P. engine, sells for \$210. The engines installed are the Little Skippers which are now being manufactured by this company.

Emmons 20 Ft. Fishing Dory.

E. GERRY EMMONS, 53-61 New Ocean Street, Swampscott, Mass. The boat illustrated is a 20 foot lobster and fishing boat, equipped with a 5 1/2 horse Emmons motor and also with a centerboard and mast step, so that it may be used either under sail or power. The motor is placed after under a sliding hatch. The boat completely equipped sells for \$275.

The Brein "Firefly" and "Nautilus."

THE BREIN MARINE WORKS, Rock Island, Ill. The "Firefly" is an 18-footer which, powered with an 8 horse double cylinder engine, sells for \$210. "Nautilus" is a 20-footer powered with a double cylinder 8 horse engine, and sells complete for \$238. These prices include hood over engine, bulkhead system of control, and a wide range of choice as to finish and equipment.

22-Footer with Standing Top.

C. P. MINGST, Evansville, Ind. The dimensions of this boat are 22 ft. over all by 6 ft. beam, and it is equipped with a 5 H. P. engine, whose dimensions are 5x6 in. The price of the boat complete as shown, with top curtains, etc., is \$300.

22 Ft. Auto Craft.

THE CLEVELAND AUTO BOAT MANUFACTURING COMPANY, Cleveland, O. The illustration shows the 22 ft. speed boat, which may be had in any stage of completion. The complete materials from which to construct the boat, together with all the necessary fittings, steering gear, gasoline tank, rudder, etc., sell for \$175.

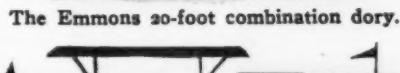
Racine 16 Ft. Family Launch.

RACINE BOAT MANUFACTURING COMPANY, Muskegon, Mich. The dimensions of this boat are 16 feet over all, beam 4 feet 6 inches, draft loaded 16 inches, length of cockpit 10 feet, and the capacity is eight persons. The boat is equipped with a 2 H. P. single cylinder engine, which gives it a speed of 6 1/2 miles per hour. The price of the boat and engine complete is \$250.

The Michigan "Silver Fox."

MICHIGAN STEEL BOAT COMPANY, Detroit, Mich. Silver Fox is a 20 foot "automobile speed boat" with V-transom stern and equipped with three large tonneau seats, accommodating nine persons. The boat is equipped with a 3 H. P. engine and sells for \$227.50. The 23 foot "Go-Devil," fitted with a 5-6 H. P. Detroit engine, sells for \$287.50. This boat has four tonneau seats and will accommodate 12 persons. "The Flyer," equipped with a 9-10 H. P., 2 cylinder engine and Detroit reverse gear, is sold for \$300, complete.

The Emmons 20-foot combination dory.



The Brein Nautilus, a 20-footer.



C. P. Mingst's 22-footer.



The 22-foot Auto Craft.



The Racine 16-foot family launch.



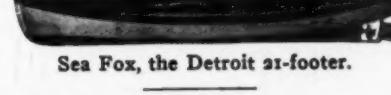
The Minnesota 22-footer.



The 18-foot Outing Standard.



The Niagara 20-foot hull.



Sea Fox, the Detroit 21-footer.

The Minnesota 22-Footer.

MINNESOTA BOAT & POWER COMPANY, Still Water, Minn. The 22-footer shown in the illustration has a beam of 4 ft. 6 in., freeboard forward 3 ft., freeboard amidships 1 ft. 11 in., freeboard stern 1 ft. 7 in. Forward deck is 5 ft. in length and engine hatch 4 ft. 6 in. long. Equipped with a 3 H. P. motor, the boat sells for \$310, and with a 6 H. P. motor, for \$360 complete.

Outing 18 Ft. Standard.

OUTING BOAT COMPANY, Ashland, Wis. The boat shown in the illustration is 18 ft. over all, and will comfortably seat 6 to 8 persons. The cockpit is divided into two compartments, the engine being located beneath the dividing cross seat. The boat equipped with a 4 horse motor sells complete for \$275; the hull complete ready for the motor may be had for \$170.

20 Ft. Niagara Hull.

THE NIAGARA MOTOR BOATS COMPANY, N. Tonawanda, N. Y. The hull shown in the illustration may be had in any stage of completion. It is 20 ft. over all by 5 ft. beam and draft of 16 in. Patterns may be had for \$4.50; frame and planking cut, \$60; hull in rough, \$80; plain sanded and corked, \$95; completely finished, \$200.

Detroit 21 Ft. "Sea Fox."

DETROIT BOAT COMPANY, Detroit, Mich. This 21-footer, known as the "Sea Fox," is equipped with a 6 H. P. engine and sells for \$300. The engine is located amidships, the after cockpit being arranged for chairs with a seat across the after end, in the forward cockpit the seats running along the sides.

Canadian 18-Footer.

THE GUARANTEE MOTOR COMPANY, 67 Bay Street North, Hamilton, Ont. The dimensions of the boat shown in the illustration are 18 ft. over all by 4 ft. 10 in. beam. Equipped with a 2 1/2 horse engine, the price is \$205; with 4 horse engine, \$225; and equipped with a reversing propeller the prices are \$225 and \$245, respectively.

Inland Lakes 20-Footer.

INLAND LAKES BOAT COMPANY, Lake Geneva, Wis. This runabout is 20 ft. over all, with beam of 4 ft. 4 in. and draft of 9 in. The seating capacity is 10 persons, and with a 3 horse Ferro the speed is from 9 to 10 miles per hour. With the 3 horse Ferro the price is \$270, and with a 4 horse engine of the same make, \$300.

18 Ft. Edson Special.

THE EDSON BOAT COMPANY, Skaneateles, N. Y. This boat is fitted with Kenyon life preserver cushions, under water exhaust, linoleum floor covering, etc. It is 18 ft. over all by 4 ft. 6 in. beam and a ft. 6 in. depth amidships. With a 3 H. P. Ferro Special, the speed is 9 miles per hour, and the price is \$250. It may be had with a 5 1/2 H. P. single cylinder Ferro for \$300.

Hunter-Weckler 18-Footer.

HUNTER-WECKLER BOAT COMPANY, Mac-Henry, Ill. This company turns out an 18-foot family launch which, equipped with a 3 1/2 H. P. Lockwood-Ash motor, sells for \$200. With a 5 1/2 H. P. motor of the same make this boat sells for \$265. Their design No. 522 also comes within this class. It is equipped with a 5-6 H. P. motor and reverse gear and sells complete, without cushions or canopy, for \$300.



19 Ft. Yawl Dory Launch.

CAMDEN ANCHOR-ROCKLAND MACHINE COMPANY, Camden, Me. The illustration above shows a 19 foot Standard yawl dory launch. The beam is 5 feet and the draft 20 inches; frames, keel, etc., are of Maine oak and the planking is of pine. The fittings throughout are of galvanized iron, including the steering wheel, flagpole, rowlocks, etc. The engine is a 2½ H. P. Knox, manufactured by the same company, giving the boat a speed of 7½ to 8 miles per hour. Price complete with motor \$300. Hull alone, \$200.



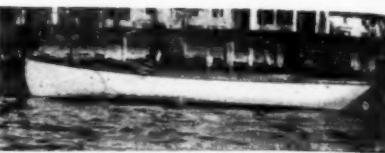
The White 20-Footer.

E. M. WHITE & CO., Old Town, Me. The construction of this boat is similar to that of the canoe, being canvas covered, but of much heavier construction. The ribs are $\frac{1}{2}$ in. thick, 3 in. wide and are spaced on $\frac{1}{2}$ in. centers. The planking is $\frac{1}{4}$ in. thick. The cockpit is 12 ft. long, leaving 4 ft. of deck at either end. The boat will seat six persons, and with its 2 H. P. motor maintains a speed of nine miles per hour. The price with complete equipment, including spray hood, is \$255. See cut below.



Three Racine Boat Co. Models.

THE RACINE BOAT COMPANY, of Racine, Wis., manufacture three models that come within this class. The 16-footer shown on right is equipped with a 3 horse motor and maintains a speed of eight miles per hour. The boat, complete with equipment, including cushions, etc., sells for \$218. The 18-footer on left, is equipped with a 3 horse motor which gives it a speed of 8½ miles per hour. The price of this boat complete with equipment is \$250. The third model is a 19-foot semi-speed boat which is equipped with a 5 horse power motor. The price of this complete outfit is \$272.



Atlantic 18½ Ft. Gurnet Dory.

THE ATLANTIC COMPANY, Amesbury, Mass. The Gurney dory shown above is sold for from \$250 to \$290, according to finish and equipment. The \$250 boat is finished with painted deck and galvanized hardware. At \$290 the decks are finished bright in pine and oak, with bronze deck hardware, steering wheel, etc. The engine installed is the Atlantic 3 H. P., a motor built by the same company especially for dory use, with Perfex ignition, Schebler carburetor, bronze shaft and propeller. In this boat is retained all the seaworthiness of the dory, but the design is greatly refined.



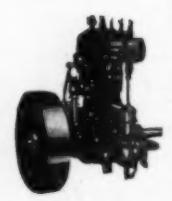
Motors for \$300 Motor Boats.

This is the third instalment of motors in the series "How Much Does a Motor Boat Cost?" In this instalment we have included all those motors which might be used in a boat costing complete not over \$300. We have taken \$200 as the price limit for the motors themselves and have endeavored to include all motors selling for prices between these figures. Starting with the May issue this series will run through twelve issues and we shall take up, as we do here, all motors made coming within the various classes, including those for use in the largest cruisers. Manufacturers are requested to co-operate with us by supplying us with photographs, descriptions and net prices to retail purchasers of their various models for insertion in this series. In sending in this matter the manufacturer will incur no obligation of any sort, but will be conferring upon us a favor. We want this motor series to be representative of the entire trade and therefore of the greatest possible value to the motor boatman and prospective motor boatman.—EDITOR.



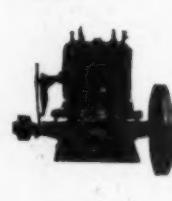
The 7½ H. P. Mianus.
(Engine complete \$150; propeller outfit \$23.50; ignition outfit \$62.50; gasoline tank \$5; pipes and fittings \$12.)

MIANUS MOTOR WORKS, Mianus, Conn. Two cycle, make-and-break ignition, bore 5 9/16 in., stroke 6 in., speed 140 r.p.m., weight 425 lbs. The 5 H. P. model also comes within this class, selling for \$110, and with complete equipment for \$146.50.



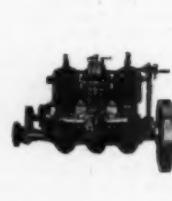
Springfield 5 H. P.
(Engine complete \$125. With complete equipment \$147.21.)

THE SPRINGFIELD MOTOR COMPANY, Springfield, Mass. Two cycle, jump spark or make-and-break ignition, bore 5 in., stroke 5 in., normal speed 400 r.p.m., height above center of shaft 20 in., diameter of flywheel 18 in., weight 310 lbs.



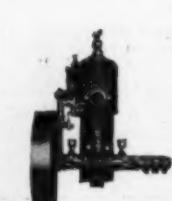
12 H. P. Peerless.
(Bare engine \$150; with complete equipment \$175.)

SIRLEY-HOUFLYER MACHINE COMPANY, Detroit, Mich. Two cylinders, two cycle, jump spark ignition, bore 4 3/8 in., stroke 5 in., normal speed 500 to 600 r.p.m., weight 400 lbs., turns three-bladed propeller 20 in. in diameter by 28 in. pitch.



The 7-8 H. P. L.-A.
(Engine complete \$145; with propeller and electrical equipment \$185; salt water fittings \$6 extra.)

LOCKWOOD-ASH MOTOR COMPANY, Jackson, Mich. Three cylinders, two cycle, jump spark ignition, bore 3 1/4 in. and stroke 3 1/2 in., height from center of shaft 13 in., diameter of flywheel 13 3/4 in., speed 200 to 1,000 r.p.m., normal 700 to 900 r.p.m.



The 4 H. P. Speedway.
(Engine complete with boat and electrical equipments, including reversible propeller, \$200.)

GAS ENGINE & POWER COMPANY, AND CHAS. L. SEABURY & CO., CONS., Morris Heights, N. Y. City. Two cycle, make-and-break ignition, 4 1/2 in. bore, 4 1/2 in. stroke, height from center of shaft 21 in., diameter of flywheel 16 in., weight 200 lbs.



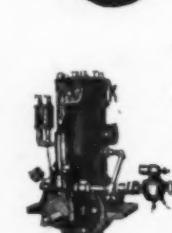
4 H. P. Regal.
(Engine complete \$133.)

REGAL GASOLINE ENGINE COMPANY, Coldwater, Mich. Four cycle, jump spark ignition, 4 1/2 in. bore by 4 1/2 in. stroke, diameter of flywheel 16 1/2 in., diameter of crankshaft 1 1/8 in., normal speed 650 r.p.m., weight 340 lbs. Valves are mechanically operated by tool steel cams and rollers enclosed in crank case, which is easily accessible by means of a large hand-hole.



5 H. P. Toppan.
(Complete with electrical and propeller equipments \$160.)

TOPPAN BOAT MANUFACTURING COMPANY, 25 Haverhill St., Boston, Mass. Two cycle, two port, jump spark ignition; will run on gasoline, alcohol or kerosene; reversible; equipment includes float feed carburetor.



7½ H. P. Sagamore.
(Engine complete \$155; propeller outfit \$23; electrical equipment \$6.)

SAGAMORE ENGINE COMPANY, Lynn, Mass. Two cycle, make-and-break ignition, bore 3 1/4 in., stroke 5 1/4 in., speed 600 r.p.m., weight 300 lbs., height from center of shaft 21 in., diameter of flywheel 10 in., engine reversible, cylinder head removable, water passage to cylinder head through outside bypass.



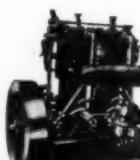
4½-5 H. P. Shortt.
(Price complete with electrical equipment, \$188.)

W. M. RYAN CO., 314 So. Canal St., Chicago, Ill. Two cylinders, bore 3 in., stroke 3 in., diameter of flywheel 10 in., height from center of crank shaft 14 in., speed range 150 to 1200 R. P. M., weight 186 lbs. This engine is similar to the two cycle marine motor in that it has a power impulse every revolution, but by uniquely designed piston and cylinder, there is also a complete scavenging every revolution.



15 H. P. Wisconsin.
(Engine complete with electrical and boat fittings \$200.)

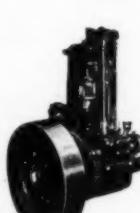
WISCONSIN MACHINERY AND MANUFACTURING COMPANY, Milwaukee, Wis. Two cylinders, two cycle, jump spark ignition, bore 4 1/2 in., stroke 4 1/4 in. The 10 H. P., 2-cylinder model sells for \$168 with complete electrical and boat equipments.



The 5 H. P. Royal.
(ROYAL ENGINE COMPANY, Bridgeport, Conn. Two cylinder, two cycle, two port, make-and-break ignition, reversible, detachable cylinder heads, water cooled exhaust manifold, height above center of shaft 17 1/2 in., diameter of flywheel 14 in.)



5 H. P. Racine.
(RACINE BOAT COMPANY, Racine, Wis. Two cycle, jump spark ignition, 4 1/2 in. bore by 4 1/2 in. stroke, speed 200-700 r.p.m., diameter of crankshaft 1 1/8 in., weight 105 lbs. This motor is reversible and is similar to those used in the Racine boats.)



5 H. P. Frisbie-Heft.
(Engine complete with electrical equipment and water connections \$160.)

FRISBIE-HEFT MOTOR COMPANY, Middletown, Conn. Four cycle, jump spark or make-and-break ignition, bore 4 3/8 in., stroke 5 in., normal speed 600 r.p.m., weight 260 lbs., diameter of crankshaft 1 1/4 in., main bearings 4 1/2 in. by 1 1/4 in., diameter of flywheel 17 in. Equipment includes Schebler carburetor.



The 7-8 H. P. Wright.
(Engine complete with electrical and propeller equipment \$165; extra for salt water fittings \$10.)

THE WRIGHT MOTOR COMPANY, 48 South Division Street, Buffalo, Two cylinder, two cycle, jump spark ignition, bore 3 1/2 in., stroke 3 1/2 in., speed 100 to 900 r.p.m.; weight 160 lbs. Rotary pump geared from timer shaft. The single cylinder 4 1/2 H. P. model sells for \$125.

8 H. P. Perfection Heavy Duty

(Completely equipped for salt water \$130 for jump spark ignition; \$140 for make-and-break ignition.)

CAILLE PERFECTION MOTOR COMPANY, Detroit, Mich. Designed especially for fishermen, bore 5 1/2 in., stroke 5 in., crank shaft 1 1/4 in., bearing 6 in. long, 100-600 r.p.m., weight 300 lbs. Also coming within this class is a 7-8 H. P. 2-cylinder motor of 3 1/2 in. bore and 3 1/2 in. stroke, designed for fast boats, and which sells for \$164, completely equipped for salt water.

**The 10 H. P. Capital.**

(Motor complete with electrical and propeller equipment \$200.)

FIELD BROS. COMPANY, Augusta, Me. Two cylinders, two cycle, jump spark ignition, 3 1/2 in. bore, 3 1/2 in. stroke, height from center of shaft 11 1/2 in., diameter of flywheel 12 in., normal speed 1,200 r.p.m. Best adapted for light, speedy hulls. The single-cylinder 5-7 horse-power high speed and the single-cylinder 5-6 medium speed sell for \$135 and \$145, respectively.

**The 6 H. P. Hartford.**

(Engine complete \$162.50; propeller equipment \$13.90; ignition outfit \$4.60.)

THE GRAY & PRIOR MACHINE COMPANY, Hartford, Conn. Two cylinders, two cycle, make-and-break ignition, 4 in. bore x 4 1/2 in. stroke, normal speed 350 r.p.m., weight 285 lbs., height from center of shaft 18 1/2 in., diameter of flywheel 14 in. The 5 H. P. single-cylinder and the 7 H. P. single-cylinder models sell for \$130 and \$185, respectively, completely equipped.

**8 H. P. Gray.**

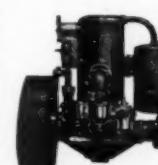
(Completely equipped \$188; for salt water \$198.)

GRAY MOTOR COMPANY, Detroit, Mich. Two cylinders, two cycle, jump spark ignition, bore 4 in., stroke 4 in., diameter of flywheel 16 in., height from base 15 1/2 in., speed 700 r.p.m., weight 212 lbs. Equipment includes forced feed lubricator. Both carburetor and spark controls are mounted conveniently on cylinder.

**The 5 H. P. Fulton.**

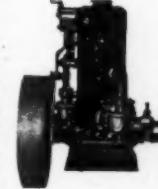
(Complete with salt water fittings, \$154.28 for jump spark and \$153.08 for make-and-break.)

FULTON ENGINE COMPANY, Erie, Pa. Two cycle, either make-and-break or jump spark ignition, bore 4 1/2 in., stroke 5 in., crank shaft 1 1/4 in., speed 600 r.p.m. Equipment includes muner, Schebler carburetor. The 2 1/2 horse model completely equipped for salt water sells for \$121.25 and \$110.75 for jump spark and make-and-break, respectively.

**The 5 H. P. Atlantic Special.**

(Engine and complete equipment \$175.)

THE ATLANTIC COMPANY, Amesbury, Mass. An especially refined model somewhat similar to the regular Atlantic model. Two cycle, jump spark ignition, bore 4 1/2 in., stroke 4 1/2 in., height from center of shaft 17 1/2 in., diameter of flywheel 15 in., normal speed 600 r.p.m., weight 165 lbs. The 4-horse Atlantic and the 6-horse 2-cylinder also come within this class, selling for \$115 and \$190, respectively.

**Miss Simplicity 8 H. P.**

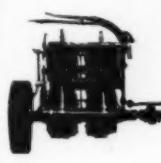
(Engine with complete equipment \$125; with reversible propeller \$135; with reversing clutch \$148; extra for salt water fittings \$7.)

ST. JOSEPH MOTOR COMPANY, St. Joseph, Mich. Two cycle, jump spark ignition, bore 5 1/2 in., stroke 5 in., height from center of shaft 20 in., diameter of flywheel 16 in., normal speed 700 r.p.m., weight 280 lbs.

**10-12 H. P. Tuttle.**

(With standard equipment \$130; electrical equipment \$14.30; propeller outfit \$12; muffler, gasoline and water fittings \$10.50.)

D. M. TUTTLE COMPANY, Canastota, N. Y. Two cycle, jump spark ignition, bore 4 1/2 in., stroke 4 in., diameter of crankshaft 1 5/6 in., speed 100-1,000 r.p.m., normal 700 r.p.m., weight 230 lbs. The 3-cylinder, 6-horse model also comes within this class, selling for \$135 with standard equipment.

**Bridgeport 5 1/2 H. P.**

(Engine complete, but without electrical and propeller equipments, \$140.)

THE BRIDGEPORT MOTOR COMPANY, INC., Bridgeport, Conn. Two cycle, jump spark ignition, bore 4 1/2 in., stroke 5 in., diameter of crankshaft 1 3/4 in., diameter of propeller shaft 1 1/4 in., weight 420 lbs., 1 1/2 in., weight 420 lbs. The 6 1/2-horse and 8-horse single cylinder motors also come within this class, selling for \$160 and \$200, respectively.

**2 1/2 H. P. Perfection Kerosene Motor.**

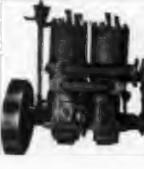
(Engine complete with muffler \$160; with electrical equipment \$170; with bronze propeller and stuffing box \$180.)

NICHOLS QUADRUPLE-TRACTION VEHICLE AND POWER COMPANY, Stamford, Conn. Two cycle, bore 3 1/2 in., stroke 4 in., height above shaft 18 in., length over all 19 in., diameter of flywheel 12 in., weight 145 lbs, speed 750 r.p.m. Starts immediately without the use of torch and is equipped with force feed system of lubrication.

**The 6 H. P. Mafco.**

(Motor with complete boat outfit \$120.)

THE ROME GASOLINE ENGINE COMPANY, Rome, N. Y. Two cylinders, two cycle, jump spark ignition, bore 3 3/8 in., stroke 3 3/8 in., diameter of crankshaft 1 3/8 in., diameter of flywheel 12 in., weight 200 lbs., timer mounted on vertical shaft, cylinder heads removable, propeller shafts 3 1/2 in. in diameter, propeller 16 in. in diameter.

**The 4-5 H. P. Lackawanna.**

(Motor complete \$115; with ignition equipment \$131.15; with propeller outfit \$145.10.)

THE LACKAWANNA MANUFACTURING COMPANY, Newburgh, N. Y. Two cylinders, two cycle, jump spark ignition, bore 3 in., stroke 3 in., height from center of shaft 11 1/2 in., diameter of flywheel 12 in., normal speed from 700 to 1,000 r.p.m., approximate weight 130 lbs., turns a 3-blade propeller 12 in. in diameter x 12 in. in pitch. Salt water fittings supplied unless otherwise requested.

**3 1/2 H. P. Lisk.**

(Engine with electrical and boat equipments \$157; with one way clutch \$182; with reverse gear \$188.)

GEORGE A. LISK, Detroit, Mich. Four cycle, jump spark ignition, bore 4 in., stroke 5 in., diameter of flywheel 13 1/2 in., diameter of crankshaft 1 1/4 in., speed from 100 to 800 r.p.m., height above center of shaft 18 in., approximate weight 175 lbs. The 5 horse-power model shown herewith is similar to the above and sells for \$185, completely equipped.

**4-5 H. P. Syracuse.**

(Engine complete \$140.)

SYRACUSE GAS ENGINE COMPANY, Syracuse, N. Y. Two cycle, jump spark ignition, bore 4 in., stroke 4 in., diameter of flywheel 14 in., height from center of shaft 15 in., weight 60 lbs., water-jacketed condensing exhaust, spark and throttle control mounted on vertical shaft, rotary circulating pump, removable cylinder head designed for high speed.

**The K & D 5 H. P.**

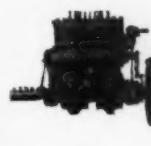
(Engine complete with electrical equipment \$95; with propeller equipment \$103; equipped for salt water \$6 extra.)

SENECA FALLS ENGINE AND SUPPLY COMPANY, Seneca Falls, N. Y. Two cycle, jump spark ignition, 4 1/2 in. bore x 4 in. stroke, diameter of flywheel 17 in., diameter of crankshaft 1 1/2 in., height above center of shaft 16 1/2 in., speed 200-600 r.p.m., weight 200 lbs.

**5 1/2 H. P. Stanley.**

(Motor \$135; with propeller outfit, ignition outfit, pipes, fittings and magnets \$171.90.)

THE STANLEY COMPANY, 79 Milk Street, Boston, Mass. Two cylinders, two cycle, jump spark ignition, 4 in. bore, 3 1/2 in. stroke, normal speed 500 r.p.m., diameter of flywheel 15 1/4 in., weight complete 290 lbs. The 3 horse-power single-cylinder and the 7 horse-power single-cylinder motors also come within this class, selling completely equipped for \$135.88 and \$167.75, respectively.

**6-10 H. P. Waterman.**

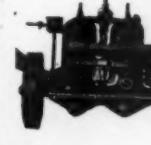
(Engine only \$140; with carburetor and oiler \$160; with regular marine equipment \$175.)

THE WATERMAN MARINE MOTOR COMPANY, 1506-18 Fort Street, W. Detroit, Mich. Two cylinders, two cycle, jump spark ignition, 4 in. bore, 3 1/2 in. stroke, normal speed 500 r.p.m., weight 275 lbs. The 3-cylinder 7-8 horse-power and the 4-cylinder, 8-10 horse-power, high speed models sell for \$160 and \$200, respectively, completely equipped.

**10 H. P. Vim Medium Speed.**

(Motor complete \$155; with electrical and boat equipment for salt water \$191.)

THE VIM MOTOR MANUFACTURING COMPANY, Sandusky, Ohio. Two cylinders, two cycle, jump spark ignition, bore 4 in., stroke 4 in., normal speed 800 r.p.m. The 2-cylinder, 6-horse-power Vim Special, complete with ignition and salt water propeller outfit sells for \$140.

**5-7 H. P. Waterman.**

(With standard equipment \$200.)

WATERTOWN MOTOR COMPANY, Watertown, N. Y. Two cylinders, two cycle, jump spark ignition, bore 4 1/2 in., stroke 3 1/2 in., diameter of flywheel 13 1/2 in., height above center of shaft 13 1/2 in., normal speed from 700 to 900 r.p.m., weight 170 lbs.

**10 H. P. Northwestern.**

(Engine complete \$130; extra for salt water fittings \$6.50.)

NORTHWESTERN STEEL & IRON WORKS, Eau Claire, Wis. Two cylinder, two cycle, jump spark ignition, bore 4 in., stroke 4 1/2 in., speed from 600 to 1,350 r.p.m., diameter of flywheel 14 in., height above base 15 in., crankshaft 1 1/4 in., net weight 325 lbs. The 6 H. P. special and 10 H. P. special also come within this class, selling for \$100 and \$150, respectively.

**The Loveland 7 H. P.**

LOVELAND MANUFACTURING COMPANY, 17 Atlantic Street, Bridgetown, N. J. Two cycle, make-and-break ignition, valveless, reversible, waterproof sparking system, extremely simple in construction, and designed for hard continuous service.



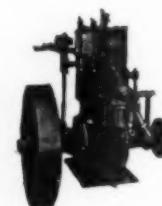
The 3 H. P. Buffalo Arrow.

(Motor complete with electrical equipment \$120.)
BUFFALO AUTO-TRUCK & MOTOR COMPANY, 24 Illinois Street, Buffalo, N. Y. Two cylinder, two cycle, jump spark ignition, bore 3 in., stroke 3 in., normal speed 600 r.p.m., weight 150 lbs., removable cylinder heads. The 4 1/2 H. P. 3-cylinder is similar to the above and sells for \$180.

**The 6 H. P. Lejeal.**

(Engine with complete equipment \$130, with reverse gear \$142, with reversible propeller \$154.50.)

LEJEAL MOTOR WORKS, Erie, Pa. Two cycle, jump spark ignition, bore 4 in., stroke 4 in., reversible timer mounted on vertical shaft, cylinder head removable, float feed carburetor. The 4-horse model also comes within this class, selling for \$105.

**The 4 H. P. Essex**

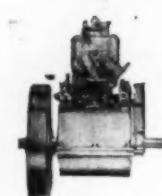
(Engine complete with electrical and boat equipments \$110.)

THE ESSEX ENGINE COMPANY, 416 Union Street, Lynn, Mass. Two cycle, make-and-break ignition, weight 267 lbs., normal speed 500 r.p.m. The 2 1/2-horse and 4-horse, single-cylinder models also come within this class, selling for \$115 and \$185, respectively, completely equipped.

**The Scripps 4-5 H. P.**

(Motor complete \$177.)

SCRIPPS MOTOR COMPANY, Detroit, Mich. Four cycle, jump spark ignition, 4 1/2 in. bore x 5 in. stroke, diameter of flywheel 17 in., size of bed 11 x 14 1/2 in., weight with aluminum crank case 170 lbs., with iron crank case 210 lbs., speed range from 125 to 600 r.p.m., normal speed 300 r.p.m.

**The 3 H. P. Truscott.**

(Engine complete with reversible propeller \$175; with reversing clutch \$186; extra for salt water fittings \$5.)

TRUSCOTT BOAT MANUFACTURING COMPANY, St. Joseph, Mich. Two cycle, make-and-break ignition, normal speed 625 r.p.m., weight 180 lbs. Equipment includes forced feed mechanical oiler, float feed carburetor, and Truscott submerged exhaust.

**Fay & Bowen 2 1/2 H. P.**

(Motor complete with electrical and propeller outfit \$140.)

FAY & BOWEN ENGINE COMPANY, Geneva, N. Y. Two cycle, make-and-break ignition actuated by gear-driven shaft, 3 1/2 in. bore by 3 1/2 in. stroke, diameter of flywheel 16 in., height from center of crankshaft 16 1/4 in., approximate weight 200 lbs., normal speed 700 r.p.m. Equipment includes either vaporized or carburetor.

**Belle Isle 9-10 H. P.**

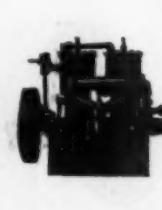
(Bore engine \$107.50; complete with accessories \$145; with salt water boat fittings \$162.50.)

THE NEW BELLE ISLE MOTOR COMPANY, Parkview and Jefferson E., Detroit, Mich. Two cylinders, two cycle, jump spark ignition, 4 1/2 in. bore by 3 1/2 in. stroke, normal speed from 200 to 1,200 r.p.m., normal 700 r.p.m., approximate weight 190 lbs.

**The Ontario 6 H. P.**

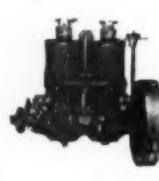
(Motor complete with electrical equipment, \$176; with propeller outfit \$185.)

ONTARIO IRON WORKS, Pulaski, N. Y. Two cylinders, two cycle, jump spark ignition, stroke 3 1/2 in., bore 3 1/2 in., diameter of crankshaft 1 1/4 in., diameter of flywheel 13 in., weight 125 lbs., normal speed 600 r.p.m.

**8 H. P. Brown-Talbot.**

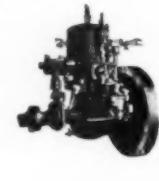
(Engine complete \$150; electrical outfit \$12; water outfit \$6; gasoline outfit \$10; exhaust outfit \$10.)

THE BROWN-TALBOT MACHINERY COMPANY, Salem, Mass. Two cylinder, two cycle, jump spark ignition, 4 in. bore by 4 in. stroke, diameter of flywheel 15 in., normal speed 600 r.p.m., weight 300 lbs. The 7 horse-power single-cylinder and the 10 horse-power single-cylinder motors also come within this class, selling at \$125 and \$175, respectively.

**6 1/2 H. P. Liberty.**

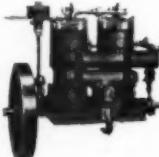
(Motor only \$91; complete with boat equipment \$100; extra for salt water equipment \$7.50.)

DETROIT AUTO SPECIALTY COMPANY, INC., 909-11 Greenwood Avenue, Detroit, Mich. Two cycle, jump spark ignition, bore 5 in., stroke 4 1/2 in., crankshaft 2 1/2 in., normal speed 750 r.p.m. The 7.8 horse-power, double-cylinder motor sells for \$175, and with complete equipment for \$200.

**The Wonder 10 H. P.**

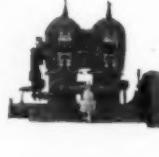
(Engine complete with electrical equipment \$190; same with boat equipment \$200.)

THE WONDER MANUFACTURING COMPANY, Syracuse, N. Y. Two cylinders, two cycle, jump spark ignition, bore 4 in., stroke 3 1/2 in., weight 200 lbs., normal speed 800 to 900 r.p.m. The 5-horse-power, 2-cylinder motor sells for \$130, completely equipped, and the 8-horse-power, 3-cylinder motor for \$200, with complete equipment.

**The 6 H. P. Pierce.**

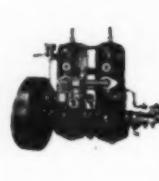
(Complete with electrical and propeller equipment \$136.)

PIERCE MOTOR COMPANY, Racine, Wis. Two cylinder, two cycle, reversing jump spark ignition, bore 4 in., stroke 4 in., normal speed 600 r.p.m. The 4 H. P. 2-cylinder model and the 6 H. P. single-cylinder model each sell for \$110.

**The Victor 6 H. P.**

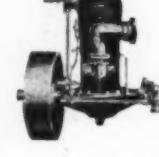
(Motor complete \$144; with electrical and boat fittings \$177.50; equipped for salt water \$190.)

ROBERT S. HILL, 24 East Woodbridge Street, Detroit, Mich. Two cylinders, two cycle, reversible, jump spark ignition, bore 4 in., stroke 3 1/2 in., speed 750 r.p.m., weight 165 lbs. The 5-horse, single-cylinder model sells for \$125.50, completely equipped for salt water.

**The 5 1/2 H. P. Ferro.**

(From \$107 to \$170, according to equipment.)

THE FERRO MACHINE & FOUNDRY CO., Cleveland, O. Two cycle, jump spark, or make-and-break ignition, bore 4 in., stroke 4 1/2 in., diameter of crank shaft 1 1/2 in., diameter of flywheel 14 in., weight 150 lbs., height from center of shaft 16 1/2 in. The 7 1/2 horse, single cylinder model also comes within this class.

**The 3 H. P. Buffalo.**

(Engine complete with electrical equipment \$175; with boat equipment, including reversible propeller, \$200.)

BUFFALO GASOLINE MOTOR COMPANY, 1280-90 Niagara Street, Buffalo, N. Y. Two cylinder, four cycle, jump spark ignition, bore 3 in., stroke 4 in., weight 200 lbs., normal speed 700 r.p.m. The 2-horse double-cylinder motor is similar and sells for \$155 with complete boat and electrical equipment.

**Elbridge 6-10 H. P.**

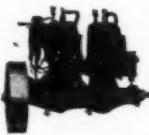
(Engine complete with electrical equipment \$175; \$30 extra for aluminum fittings.)

ELBRIDGE ENGINE COMPANY, Culver Road, Rochester, N. Y. Two cylinders, two cycle, jump spark ignition, bore 3 1/2 in., stroke 3 1/2 in. The 6-10 horse, single-cylinder sells for \$150 and \$165, in iron and aluminum, respectively, also coming within this class.

**7 H. P. Fox Special**

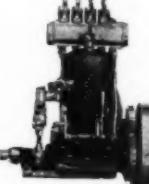
(Engines complete with salt water boat fittings \$147.)

THE DEAN MANUFACTURING COMPANY, "South Cincinnati," Newport, Ky. Two cylinders, two cycle, jump spark ignition, 3 1/2 in. bore x 3 1/2 in. stroke. Turns a 3-bladed, 15-in. propeller 800 r.p.m., weight 175 lbs.

**Rochester 6 H. P.**

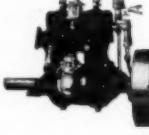
(Engine complete with electrical equipment \$175.)

ROCHESTER GAS ENGINE COMPANY, Rochester, New York. Two cycle, jump spark ignition, 3 1/2 in. bore x 3 1/2 in. stroke. The 4-horse size also comes within this class, selling for \$145 with the same equipment as stated above.

**The 6 H. P. Roberts.**

(Engine complete without boat and electrical equipment \$120.)

THE ROBERTS MOTOR COMPANY, Sandusky, Ohio. Two cylinders, two cycle, jump spark ignition, 3 1/2 in. bore x 3 1/2 in. stroke, 125 lbs. weight 150 to 1,225 r.p.m., H. P. rating at 100 r.p.m., back fire prevented by cellular by-pass.

**The Stuart 4-6 H. P.**

(Engine with complete equipment \$150.)

JOHN STUART COMPANY, Wallaston, Mass. Two cycle, jump spark ignition, bore 5 in., stroke 4 in., speed from 130 to 1,200 r.p.m., exhaust casting water-jacketed, ample hand-holes in vertical shaft. The equipment includes float feed carburetor.

**The 12 H. P. Trebert.**

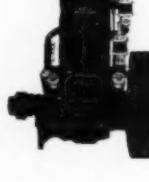
(Engine with electrical equipment \$181.50.)

THE TREBERT GAS ENGINE COMPANY, Butler, Indiana. Two cycle, jump spark ignition, bore 6 1/4 in., stroke 6 in., height from bottom of base to top of water pipe 30 3/4 in., diameter flywheel 28 in., diameter of crankshaft 2 in., normal speed 650 r.p.m. Coming within this class also are the 1, 2, 3, and 4-cylinder canoe engines, selling for \$48, \$75, \$123 and \$170, respectively.

**The Hall 3 H. P.**

(Engine complete \$150; with boat and electrical equipment \$203; \$5 extra for salt water fitting.)

THE HALL GAS ENGINE COMPANY, 4821-31 Garden Street, Bridgeburg, Philadelphia, Pa. Four cycle, make-and-break ignition. Exhaust pipe water-jacketed, cylinder head removable. Speed ranges from 100 to 600 r.p.m.

**4-6 H. P. Pierce-Budd.**

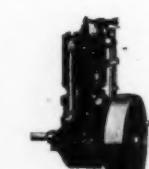
(Price with boat and electrical equipment \$155.)

PIERCE-BUDD COMPANY, 201-5 Saginaw Street, Bay City, Michigan. Two cycle, jump spark ignition, 4 in. bore x 4 in. stroke, height from center of shaft 14 in., diameter of flywheel 14 in., weight 118 lbs., timer mounted on vertical gear-driven shaft, positive, circulating pump, also driven through gearing.

**The Clay 6 H. P.**

(Engine without equipment \$125.)

E. H. CLAY & CO., 6950 Kinsman Road, Cleveland, Ohio. Four cycle, jump spark ignition, 3 1/2 in. bore x 6 1/4 in. stroke, intake and exhaust 2 1/4 in., diameter of flywheel 22 in., weight 150 to 700 r.p.m., speed ranges from 150 to 700 r.p.m., normal speed 500 r.p.m., timer of the roller type mounted on cam shaft. The 8 and 10-horse models sell for \$135 and \$145, respectively.



4 H. P. Cushman.

(Motor complete with reversible propeller and electrical equipment \$129.50.)

CUSHMAN MOTOR WORKS, Lincoln, Neb. Two cycle, jump spark ignition, bore 4 in., stroke 3½ in., diameter of flywheel 14 in., height over all 20 in., normal speed 950 r.p.m., weight 135 lbs., adjustable bearings, equipped with Cushman patented compression rings.



The Cooley 6 H. P.

(Motor complete with electrical and boat equipments \$150.)

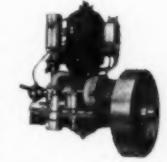
COOLEY MANUFACTURING COMPANY, Waterbury, Vt. Two cycle, make-and-break ignition. This motor was designed for hard continuous service at medium speed and is especially adapted for dory use. Exhaust chamber is water-jacketed, and if desired this model may be had with the cylinder head cast integrally. The 4 H. P. model sells for \$120 complete.



The Willet 8 H. P.

(Engine complete \$200.)

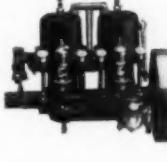
WILLET ENGINE & CARBURETER COMPANY, 764 Elyott Square, Buffalo, N.Y. Two cycle, jump spark ignition, bore 4½ in., stroke 4½ in., speed range 200-1,000 r.p.m., diameter of crankshaft 1½ in., aluminum base, weight 210 lbs. complete, including reverse gear, not shown.



The 6-7 H. P. Weco.

(Engine complete with electrical and salt water propeller equipment \$140.)

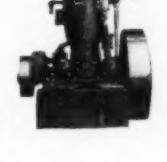
C. T. WRIGHT ENGINE COMPANY, Greenville, Mich. Two cylinders, two cycle, jump spark ignition, bore 3½ in., stroke 3½ in., diameter of flywheel 12 in., diameter of crankshaft 1½ in., normal speed 775 r.p.m.



7½ H. P. Universal.

(With jump spark ignition \$150; with make-and-break ignition \$155.)

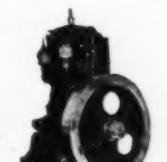
WEST MYSTIC BOAT COMPANY, West Mystic, Conn. Two cycle, jump spark and make-and-break ignition, bore 5 in., stroke 5 in., normal speed 550 r.p.m., diameter of flywheel 18 in., height from base 20½ in., timer mounted on vertical gear-driven shaft, removable cylinder head, weight 375 lbs.



5-6 H. P. Detroit.

(Engine and equipment with salt water fittings \$103.)

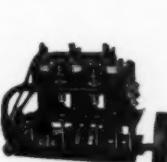
DETROIT ENGINE WORKS, Detroit, Mich. Two cycle, jump spark ignition, bore 4½ in., stroke 4½ in., diameter of crankshaft 11½ in., diameter of flywheel 17 in., height over all 20 in., speed range from 50 to 950 r.p.m., weight 180 lbs.



The 5 H. P. Dunn.

(Motor complete \$125.)

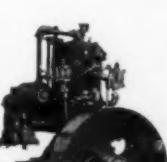
WALTER E. DUNN, Ogdensburg, N.Y. Three cylinders, four cycle, jump spark ignition, open base construction, bore 3½ in., stroke 4 in., weight 175 lbs. The 2-cylinder 8 H. P. model, the 3-cylinder 12 H. P. and the 4-cylinder 16 H. P. also come within this class, selling for \$125, \$150 and \$175, respectively.



4½ H. P. Knox.

(Complete outfit with engine \$176.)

CAMDEN ANCHOR-ROCKLAND MACHINE COMPANY, Camden, Maine. Two cycle, make-and-break ignition, bore 5 in., stroke 5½ in., diameter of flywheel 17½ in., speed 450-500 r.p.m., weight 340 lbs. Coming within this class also are a 2½-horse single-cylinder and a 3½-horse single-cylinder motor, selling for \$125 and \$145, respectively, completely equipped.



6 H. P. Watkins.

(Motor \$90; with electrical and propeller equipments \$125.)

THE WATKINS MOTOR COMPANY, 523-29 Baymiller Street, Cincinnati, Ohio. Two cylinders, two cycle, three port, 3 in. bore by 3 in. stroke. The base is of aluminum, and the water jackets are of spun copper, making the engine extremely light.



The T. & M. 5 H. P.

(Complete with electrical and propeller equipments, \$164; \$6 extra for salt water fittings.)

TERMAAT & MONAHAN COMPANY, Oshkosh, Wis. Two cycle, jump spark ignition, 4 in. bore x 4 in. stroke, reversible, weight 195 lbs. Timer mounted on vertical shaft. Equipment includes polished bronze speed propeller.



Hall 3 H. P. Opposed.

(Engine complete \$130.81; with electrical and boat equipment, \$169.19; for salt water \$173.25.)

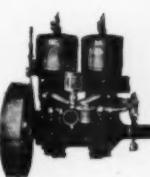
HALL GAS ENGINE MANUFACTURING COMPANY, Byesville, Ohio. Two cylinders, horizontal opposed, four cycle, jump spark ignition, 3½ in. bore x 3 in. stroke. The equipment includes a reverse gear, and this model may be had without this appliance for \$156.69.



The 6 H. P. Thrall.

(Motor complete with electrical and propeller equipment \$125.)

THRALL MOTOR COMPANY, Detroit, Mich. Two cylinders, two cycle, jump spark ignition, bore 3½ in., stroke 3½ in., height above center of shaft 14½ in., weight 110 lbs., copper water jacket.



The 2 H. P. Brownie.

(Engine complete with electrical and propeller equipment, \$135.)

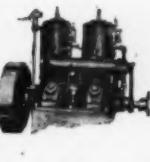
THE B. F. BROWN GAS ENGINE CO., Syracuse, N.Y. Two cycle, two cylinder, jump spark ignition, bore 2½ in., stroke 2½ in. This engine was designed specially for light, high speed work, and with its aluminum base and crank case weighs but 50 lbs. The 3 H. P. two cylinder, the 3 horse single cylinder, the 6 horse double cylinder and the 5 horse single cylinder sell for \$145, \$100, \$175 and \$135 respectively.



The 12 H. P. Toledo Canoe Engine.

(Engine complete with electrical equipment, \$155.)

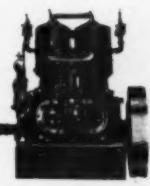
THE UNIVERSAL MACHINE CO., Toledo, O. Two cylinders, two cycle, jump spark ignition, bore 4½ in., stroke 4½ in., diameter of crank shaft 1½ in., size of base 13½ in. x 14½ in., weight with equipment 290 lbs., timer mounted on vertical gear driven shaft, cooling water piped through exhaust manifold.



Anderson 2 H. P.

(Engine complete with reverse gear, electrical and propeller equipment, \$175.)

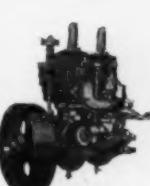
ANDERSON ENGINE COMPANY, Shelbyville, Ill. Two cylinders, four cycle, jump spark ignition, 4 in. bore x 4 in. stroke, speed 600 r.p.m., diameter of flywheel 15 in., height from center of shaft 17½ in., weight 250 lbs.



The 7 H. P. Eagle.

(Engine complete with electrical and propeller equipments, \$185.)

PROGRESSIVE MFG. CO., Inc., Torrington, Conn. Two cylinders, two cycle, jump spark or make and break ignition, normal speed 750 r.p.m., bore 3½ in., stroke 4 in., diameter of flywheel 14 in., diameter of crank shaft 1½ in., weight 275 lbs.



The De Mooy 6-8 H. P.

(Engines complete \$125; with electrical and propeller equipments \$160-\$180.)

DE MOOY BROTHERS, 1831-7 East 55th Street, Cleveland, Ohio. Two cycle, jump spark ignition, 4½ in. bore by 5 in. stroke, normal speed 600-800 r.p.m., diameter of flywheel 18 in., height from center of shaft 16½ in., weight 210 lbs. Timer mounted on vertical gear-driven shaft.



Conditions for the Marblehead Race.

285-Mile Contest From Corinthian Y. C. of Marblehead to the Crescent A. C. of Bay Ridge. Early Indications are That This Year's Race Will be More Popular Than Ever.

THE Marblehead Race was probably the most popular long distance race held last year, and the indications are that this year's event will attract considerably more entries than did that of last year. The start will be made on the morning of July 16th from the Corinthian Y. C. of Marblehead, Mass., from which point the course lies down the coast outside the Island of Manhattan to a point off the Crescent A. C. of Bay Ridge. Applications for entry blanks should be made to A. F. Aldrich, of the Crescent A. C., Brooklyn; W. L. Carlton, of the Corinthian Y. C., of Marblehead; or to W. M. Beiling, of No. 1 Hudson St., New York City.

The conditions for this year's race are as follows:

START.—July 16, 1910, at 10 a. m., or such later time as the Regatta Committee may consider best.

CONDITIONS.—The race is for cruising boats of not less than 30 feet over all, not exceeding in the greatest length 40 feet over all, and with a waterline breadth of not less than one-fifth of the waterline length. A cruising boat is one built and used for cruising; must have trunk cabin house and self-bailing cockpit. Cabin must contain sleeping, cooking and general living accommodations for crew.

PROPELLING FORCE.—An explosive engine or engines operated either by gasoline, kerosene or alcohol.

CREW.—The crew, which shall not be changed during the race, must consist of not less than four persons, two of whom may be paid hands. In the event of the owner not being on board during the race he must be represented by a member of a recognized club. No paid navigator or pilots will be allowed, and each owner or his representative will be required to deliver to the committee before the start of the race, a list giving the names and vocations of all the members of his crew.

EQUIPMENT.—Boats may carry an optional amount of fuel, all of which must be in

fixed tanks permanently piped and connected. Each boat must carry on deck or tow a tender at least 10 feet long or a life raft satisfactory to the Regatta Committee; must carry two anchors and ropes, side and other lights required by Federal regulations, a life preserver for each member of crew, compass, charts, lead line, buckets and at least two fire extinguishers.

RATING AND ALLOWANCE.—Will be calculated under the 1909 rules of the American Power Boat Association, with full time allowance.

MEASUREMENTS.—Shall be made by W. B. Stearns or persons appointed by the Regatta Committee, and a measurement fee of \$10 shall be paid by the entrant on receipt of measurement certificate. Boats without certificates must be at Marblehead ready for measurement before 9 a. m., July 14, 1910. Measurements will be posted as soon after as practicable, and all protests as to eligibility and rating must be lodged with the Regatta Committee before the start. If requested, any owner or his representative, shall be required to furnish a certificate stating that no changes to hull, propeller or machinery, have been made after the boat has been measured.

PRIZES.—First, second and third prizes will be given by the Crescent Athletic Club. First prize will be the Wilson Cup offered by Commodore F. M. Wilson of the Crescent A. C. Souvenir prizes will be presented to the owner of every boat that finishes the race.

COURSE.—Which will be figured at 285 nautical miles, will be from the Corinthian Yacht Club, Marblehead, Mass., to Crescent Athletic Club, Bay Ridge, Brooklyn, N. Y., outside of Long Island. No other restrictions whatever as to course.

ANCHORING.—Racers may enter any port and anchor if necessary through stress of weather, but must enter and leave under their own power.

TOWING.—Any racer accepting a tow will be disqualified.

FUEL AND SUPPLIES.—Any boat using kerosene will be allowed 10 gallons of gasoline in cans, for use in starting the engine, and shall be allowed five gallons of gasoline in a sealed can for use in an emergency, but seal and can must be intact at finish, or boat will be disqualified. Enerine, picric acid, ether or any other ingredient to increase the power of the fuel, will not be allowed; and no gasoline lighter than commercial 76 degrees Baume stove gasoline will be allowed. Racers may renew their fuel supplies, but all fuel must be put into tank or tanks before leaving the supply station. Arrangements will be made to supply gasoline at Cottage City Harbor, Mass. Entrance to harbor is through a jettied passage lighted with two red lights; pass between these lights to dock at head of harbor to left of entrance. Entrance is about one mile south of East Chop Light.

LOG.—Each captain must keep a log giving the approximate time of passing prominent objects, direction and strength of wind and condition of sea. This must be handed to the committee within 12 hours after finishing.

PROTESTS.—Must be made in writing within 48 hours after first boat finishes.

INSPECTION.—Boats must report to the committee at Marblehead for final inspection 24 hours before start of race.

SAILS.—Boats carrying sails of any description must have them sealed by the committee before the start, and seals must be intact at the finish of the race.

ENTRIES.—All boats must be measured and rated before starting. No unrated boat will be allowed to start and entries must be made in writing before noon, July 5, 1910. A full description should be sent with the entry. All entries will be accepted subject to inspection.

REJECTION.—The committee reserve the right to reject any entry if, in their judgment, the boat is not a bona fide seaworthy cruising craft, or in any way improperly equipped.

Ballasting the Motor Boat.

The Popular Belief That Weights Should Be Concentrated at Lowest Points a Fallacy. Boat's Behavior in a Seaway Dependent Upon the Placing of Its Weights and Ballast.

By W. E. Partridge.

TO say that a deep ballasted hull is more seaworthy than one of shallow draft is in the main correct, but this is really not the last word to be said on the subject.

A deep hull may have the ballast so disposed as to pitch badly and to pound uncomfortably in a seaway, and a shallow hull can be ballasted so as to be a very comfortable sea boat. Neither the form nor the ballasting alone will always provide an easy sea boat. Badly disposed ballast in a good hull may make a boat behave uncomfortably in a sea and with the ballast properly arranged a poorly modeled hull may perform very well.

In the early days of the motor boat the engine was often placed in the extreme stern and the fuel tank in front of a bulkhead in the bow. Thus the weights were in the very ends of the boats. The bow being heavily weighed did not have buoyance enough and when plunging into a head sea would not rise, solid water would come aboard and plunging and slow rising is a characteristic of boats having their weights in the extreme ends.

Regardless of the form of the hull, if we concentrate the load or ballast in the center of the boat we shall have a very disagreeable

motion in a seaway. The ends will rise and fall rapidly and her motion will be quick and uncomfortable. Even a deep hull may pound unmercifully.

Weights concentrated and placed low down are most unfortunate. There are very scientific ways of explaining this but in its simplest form the reason is that the weight is so placed as to have a great leverage in bringing the hull back to its natural position. This causes quick, violent movements and makes a hull so ballasted extremely uncomfortable, to say the least.

When the weights are fairly spread out along a boat's length the behavior is much better. The sea does not have such leverage in lifting and the motion is much more regular. This is one of the reasons for placing fuel tanks away from the engine and for distributing the weights in general.

There is a widespread notion that all weights should be low down. The reasoning is that if the center of gravity is kept down the boat will be more difficult to overturn and the safety will be increased. It does not follow, however, that such a boat is safe or easy. Quite the contrary, and we have a curious illustration of the advantages of carry-

ing the weights high in some of our paddle boats. Although mostly intended for our inland waters they have been built for sea service. The surprising thing about them is that they are extremely good sea boats. Even the older type, with the boilers on the guards and the walking beam, as well as the machinery extending far above the deck, were surpassingly easy in a seaway. The hulls were shoal and flat bottomed. But they made good weather in a heavy sea because the weights were high. They were so high in fact, as one ship builder put it, that "they bottom up." That is to say that the center of gravity of the boat and her engine and boilers was far above the center of displacement. In a motor boat if we wish for easy behavior among the waves the weights must not only be distributed fore and aft but they must not be placed too low down. Weights may be well placed at the sides of the boat for convenience and for ease of motion. When tanks can be placed high there is often a gain by so doing. It is well worth while for an owner with a hull which does not behave to suit him to spend some little time in trying what can be done by a general rearrangement of the ballast and tanks.



The lawns, verandas and even the roof of the Larchmont Yacht Club attract spectators upon regatta days. The British will endeavor to recapture the Harmsworth Trophy in the waters near this club upon August twentieth.

Detroit Motor Boat Club, Detroit, Mich.—“The Pilot,” the official organ of this club has made its appearance and will be published upon the first of every month and issued free to members of the club and other recognized clubs along the Great Lakes. William E. Scripps, the commodore of the club, states that the magazine is to be published in the interests of sport to keep every member posted upon the affairs of the club. Space is devoted to a list of new members, programs of racing and social events, and reports of all regattas and contests. Suggestions are to be offered in the pages of the publication for gasoline engine troubles, and it is the idea of the club to make the magazine as helpful as possible.

McKeesport Launch Club, McKeesport, Pa.—This club was organized in September, 1909, with a small membership, but through the excellent work of the officers the club has rapidly come into prominence and at the present time owns a fleet of 30 racing and pleasure boats which are ready to meet any of their class on the Monongahela, Ohio, or Allegheny Rivers or the Great Lakes. On July 8th and 9th it is planned to hold an Old Home Week Regatta and many boats have signified their intention of entering from the principal cities of Ohio, West Virginia and Pennsylvania. Three cups are offered in each race and the prizes for the two days’ racing aggregate \$1,000 in value. On July 8th a special race for the McKeesport Evening Times Trophy Cup will be run for boats in the 22-foot class. A sweepstakes race will be held on Labor Day, open to all boats on the three rivers and the Great Lakes under 40 feet in length for several large gold cups. The officers of the club are as follows: Commodore, Ross L. Thayer; vice-commodore, Dr. F. D. Davis; rear-commodore, Charles Clincher; purser, F. A. Decker; corresponding secretary, C. M. Zimmerman; fleet captain, Chris Markus; chairman of house committee, Dr. H. S. Arthur; chairman of regatta committee, Dewain King; chairman of membership committee, George Green.

Lake Whatcom Motor Boat Club, Bellingham, Wash.—Although this club was organized less than two years ago it has become one of the most progressive and influential clubs along the Pacific coast. Gasoline craft play a large part in the commercial life of this section of the country and the clubs have done much to promote their use. This club owns a valuable site upon Lake Whatcom, and the members are planning to greatly improve their property. Great interest is being shown in the Alaska-Puget Sound race which is

planned for the middle of August, and but \$1,500 more needs to be raised. In order to make it an inducement to subscribe, the Pacific International Power Boat Association has offered to make that town upon the coast which shall first raise the sum, the southern terminus of the race.

Motor Boat Club of America, New York City.—Commodore H. H. Melville and James Blair, Jr., recently returned from London where they conferred with the British challengers for the Harmsworth Trophy. They report that much interest is being shown in England over the event and that several members of the Motor Yacht Club and British Motor Boat Club will come over to attend the elimination trials before the final event. The British will probably send three representatives, but it is not likely that any other country will be represented. The elimination trials for the three challengers will take place abroad upon July 13th when it will be finally decided which boats will be sent to this country.

Lake Auburn Boat Club, Lewiston, Me.—Although a number of boats were not yet in trim for the season, this club held a very successful opening regatta and it is planned to hold bi-weekly regattas throughout the summer. A three-mile course has been laid out by the committee from bearings taken on

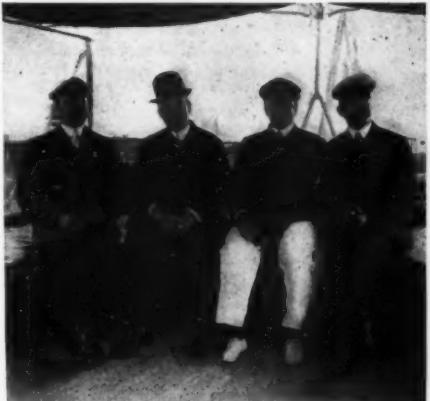
the ice during the winter, and all the measurements are accurate. A number of new boats have been added to the fleet and several are expected to show considerable speed.

Utica Motor Boat Club, Utica, N. Y.—At the initial run of this club the start was made from the portion of the Erie Canal between Genesee and John Street bridges, with Rome as a destination. Twelve boats were entered and although a heavy rain interfered somewhat with the plans the fleet came home in fine form. A number of other runs have been planned for the season.

St. Louis Power Boat Association, St. Louis, Mo.—This association is preparing for its annual cruise which will commence on the morning of July 1 at St. Louis, with Peoria, Ill., the destination where the boatmen expect to arrive July 3, in time for the regatta and convention of the Mississippi Valley Power Boat Association, July 4, 5 and 6. Fully 35 boats are expected in the fleet that will leave St. Louis and this will be augmented at Grafton, Ill., where the Illinois River flows into the Mississippi, by fleets from up-river clubs, including those of Quincy, Ill., Keokuk, Ft. Madison, Burlington, Muscatine, and Davenport, Ia., and Rock Island, Ill. Unless something interferes with the plans of the various clubs the entire fleet will number 100 boats. After the regatta at Peoria some of the St. Louis boats will go through to Chicago and others will proceed by way of Hennepin Canal to Rock Island, Ill., and return to St. Louis down the Mississippi. Dr. G. M. Phillips, C. C. Butler, O. L. Slocumb, and J. B. Green have been appointed delegates from the St. Louis Power Boat Association to the convention of the Mississippi Valley Association.

Tar Heel Motor Boat Club, Washington, N. C.—This club, which was organized short time ago, has adopted as a club burgee a white swallow-tail pennant with a red star and crescent in the center. The club has already had two squadron drills and marine parades and preparations have been made for a large celebration upon the 4th of July, to which invitations have been issued to all motor boat and yacht clubs along the Atlantic seaboard.

Motor Boat Club of Buffalo, Buffalo, N. Y.—W. J. Conners, owner of Courier II, which was entered in the Palm Beach races last winter, has just had designed by R. H. Truitt, of Chillicothe, Ill., a new hull to carry the 240 h.p. Sterling engine of Courier. The Sterling Company are supervising the building of the hull and the new craft is expected to enter many races along the Great Lakes and St. Lawrence River this summer.



Officers of Chesapeake Bay Yacht Racing Association.

Left to right: J. A. Dinning, chairman power boat committee; Com. W. W. Grier, president; Com. J. H. Robinette, secretary-treasurer; Vice-Com. T. C. Morris, vice-president.

Colonial Yacht Club, New York City. The messages from Governor Hughes and Mayor Gaynor to Governor Stewart and Mayor Reyburn, with the message from the New York Times to the Philadelphia Ledger, which Hamilton carried upon his recent flight from New York to Philadelphia, were carried to Governors Island on board Alma II, Franklin P. Pratt, owner, and in order to take no chances of being late, the messages were upon their way to the island at 5 a. m. The Times party boarded the craft at 4:45 o'clock and were at Governors Island at 5:30 o'clock.

Maryland Motor Boat Club, Baltimore, Md.—This club held its first regatta June 6 in connection with the annual outing of the Benevolent and Protective Order of Elks at Riverview, and while there were but few entries it was largely due to the short notice that the regatta committee gave to the boat owners. There were, however, four entries in the cabin class and three entries in the open boat class. In the former class the competing boats were: Esther, Ambrose Vogt and Edward A. Weiler, owners; Madeline, James C. Callis, owner; Mattie B., B. B. Peusch, owner; and Regis, Charles Pfeiffer and Karl Harig, owners. The open boats entered were the Severn, E. A. Williams, owner; Skidoo, R. E. L. Quarles, owner; and Maryland, Philip and Joseph O'Brien, owners. The course of both classes was four miles, two miles to a leg. The cabin event was won by the Esther in 33 minutes with the Madeline second. In the open boat class every one of the contestants was disqualified. The judges were George Barth and Waldo Bigelow, and the timers were Joseph L. Vaeth and W. Herbert Sloan.

Portland Power Boat Association, Portland, Me.—After a very successful opening day for the season, interest is centering upon the cruise to Augusta which is being planned. About 20 boats are expected to make the trip and the fleet will anchor off Bath for the first night, where the members will be entertained by the Bath Yacht Club. A number of races are planned to take place later in the season. The officers of the club for 1910 are as follows: Commodore, Ervin Clark; vice-commodore, Charles Schonland; secretary, C. R. Williams; treasurer, N. D. Gould; fleet captain, E. R. Josselyn.

The Chesapeake Bay Yacht Racing As-

New York to Albany and Return

The second annual race from New York to Albany and return will be held by the New York Motor Boat Club upon Saturday, July 2d, the start being off the club house, Hudson River at 147th Street, at 7 P. M. The total distance is 270 statute miles and boats must finish before 7 P. M. July 4th. All boats are rated under the 1909 A. P. B. A. rules and the race is open to all motor boats (except automobile boats) under 40 feet L. O. A. and having a waterline beam of not less than one-fifth of the waterline length, and enrolled in any recognized club. The first prize is the New York Motor Boat Club Cup, presented to the boat making the best corrected time, and second and third prizes will also be given in addition to a time prize for the best actual time made. An engraved shield will also be given to each boat to finish. The race last year was won by Martha, Paul Kossak, New York, owner.

sociation, Baltimore, Md.—Arrangements are now being made for the point-to-point motor boat race for the week's cruise and races beginning July 16. The power boat committee, of which Mr. J. Austin Dinning, of the Baltimore Yacht Club, is chairman, will shortly send out invitations to the Baltimore motor boatmen to enter the races from Baltimore to Annapolis and from Annapolis to the Patuxent River. In the latter harbor the fleets of the Hampton Roads, Capitol and Chesapeake Yacht Clubs will rendezvous, and there will be arranged a special series of point-to-point races that will include from that point to Oxford, thence to Annapolis. Among the boats that will enter will be the Alanna, of the Maryland Motor Boat Club; the Free Lance, of the Baltimore Yacht Club; and the Nuska, of the Baltimore Motor Yacht Club.

New York Motor Boat Club, New York City.—The following regatta committee has been appointed for the season of 1910: W. E. Little, chairman; Walter M. Bieling, Julian Chase, E. T. Keyser, S. P. McKinn, W. B. Rogers, Jr. It has been decided to hold the

annual race from New York to Albany and return, starting at 7 P. M. July 2d, and the regatta committee has also arranged a series of three races to take place upon Sunday, July 10th and 31st and August 28th. These races will be run as a series and will be open to all club members. The classes will be as follows: A, cabin boats; B, open boats over 22 feet in length; and C, open boats 22 feet or less in length. The method of handicapping will be decided upon by the committee for each contest. There will be a first prize on corrected time for each class for the races on each of these dates and a second prize on corrected time if five boats start in a class. Handicaps will be made out beforehand, so that the winner will be the first boat to finish. A series prize will be given for each class after the third race.

Newark Motor & Yacht Club, Rossville, Staten Island.—The new summer home of this organization was opened a short time ago and was attended by a great number of members and guests. The new home of the club is the old Winant mansion which includes 23 acres of ground and 600 feet of shore front. The house sets back about 500 feet from the water and is surrounded by large lawns. A large farm in connection with the property will be used to raise vegetables for the table. There are 18 rooms in the house, and it is the intention to use the upper floor for sleeping apartments. An excellent anchorage is furnished directly in front of the house and a bottom composed largely of fire clay gives an excellent holding ground.

Brockville Motor Boat Club, Brockville, Ont.—The first annual meeting of this club was held a short time ago and the following officers were elected: Commodore, J. A. MacKenzie; vice-commodore, Dr. Robertson; secretary-treasurer, H. B. White. Commodore MacKenzie showed at the meeting that the club had been unusually successful during the past year and had been able to influence the Dominion Government to buoy and light the inside Canadian channel between Brockville and Rockport. A communication was read from the Thousands Islands Yacht Club requesting the co-operation of the organization in endeavoring to bring two of the English boats, which will be in this country for the Harmsworth Trophy Race, to the St. Lawrence during the summer.



July 2: Brooklyn, N. Y.—Start of annual regatta held by the Brooklyn Yacht Club over the Cape May course.

July 2: Chicago to Muskegon, Mich.—Race for the Racine Cup, held by Columbia Yacht Club.

July 2: Sea Isle City, N. J.—Open regatta for all classes held by Sea Isle City Yacht Club.

July 2: New York to Albany and return.—Held by New York Motor Boat Club.

July 2-5: Cleveland, O.—Annual regatta of Lakewood Yacht Club held on Lake Erie.

July 4: Larchmont, N. Y.—Annual regatta of Larchmont Yacht Club.

July 4: New York to Albany and return.—Races held by the New York Motor Boat Club.

July 4-6: Mississippi Valley Power Boat Assn. Regatta.—Peoria, Ill. Held under the auspices of the Illinois Valley Yacht Club. William S. Kellogg, Jr., secretary racing committee.

July 4-9: McKeesport, Pa.—Regatta of McKeesport Launch Club.

July 8: Atlantic City, N. J.—Start of annual ocean race held by the Yachtsmen's Club of Philadelphia over a 140 mile course.

July 9: Cleveland, Ohio.—Open regatta for championship of city of Cleveland, held by Cleveland Yacht Club.

July 9: New York.—Club races held by New York Motor Boat Club.

July 14: Atlantic City to Sea Gate.—Start off Seaside Y. C. at Atlantic City and finish off Atlantic Y. C. at Sea Gate. Cruisers 40 L.O.A. or under eligible.

July 16: Marblehead.—Bay Ridge Race.

July 16: New York.—Races held by Crescent Athletic Club.

July 16-19: Chicago to Charlevoix, Mich.—Relay Race held by Columbia Yacht Club.

July 16-21: Baltimore, Md.—Annual cruise and regatta of Chesapeake Bay Yacht Racing Association.

July 18-24: Put-in Bay, Ohio.—Annual regatta of Inter-Lake Yacht Racing Association of Lake Erie.

July 23-30: Brooklyn, N. Y.—Annual cruise of Brooklyn Yacht Club.

July 26: Holly Beach to Camden.—Race for open speed boats held by Holly Beach (N. J.) and Camden (N. J.) Yacht Clubs.

July 30: New York.—Races held by Atlantic Yacht Club at Sea Gate.

July 31: New York.—Club races held by New York Motor Boat Club.

August 4, 5, 6: American Power Boat Association.—Gold Challenge Cup Races held at Alexandria Bay on the St. Lawrence River, Dixie II, representing the Thousand Islands Yacht Club, defending the cup.

August 13: Boston.—Open power boat race for boats from 30-40 ft. L. W. L. held by Boston Yacht Club.

August 15, 16, 17: Huntington Harbor, L. I.—Elimination trials to select three boats to defend the Harmsworth Trophy.

August 20: British International Race.—Race for the Harmsworth Trophy, held in Larchmont harbor, on Long Island Sound, under auspices of the Motor Boat Club of America, the present holder of the trophy.

August 25: Alaska-Seattle Race.—From Juneau, Alaska, to Seattle, a distance of over 1000 miles.

August 27: Chicago to Peoria.—Start of cruise of Columbia Yacht Club of Chicago.

August 30-31: Western Power Boat Assn.—Second annual regatta held at Peoria, Ill.

September 5: Chicago, Ill.—Annual regatta of Calumet Power Boat Club under auspices of Western Power Boat Association.

September 5: Hudson River Yacht Racing Assn.—Annual regatta held at Ossining, New York.

September 5: McKeesport, Pa.—Regatta held by McKeesport Launch Club.

September 4: Larchmont Harbor.—Race for cruising motor boats around Long Island, held by Larchmont Yacht Club.

September 17: Niagara Falls, N. Y.—Power boat race through the Whirlpool Rapids to Lewiston.

October 8: McKeesport, Pa.—Regatta held by McKeesport Launch Club.

New Things for Motor Boatmen.

New Attachments and Accessories That are Offered to the Man With a Boat. The Month's Production of Devices Designed as Aids to Motor Boating.

[Under this heading will appear each month descriptions and, whenever possible, illustrations of the various devices designed to add to the pleasure and comfort of motor boating which have been brought out since the previous issue. It should be kept in mind that the department in any one issue is, as it were, only one month's instalment of the many useful things on the market, and that it will be well to consult the previous issues of MOTOR BOATING which will form, together, a very complete illustrated directory of the things the motor boatman needs. —In writing the makers of the articles shown, if our readers will mention MOTOR BOATING, they will receive special attention.]

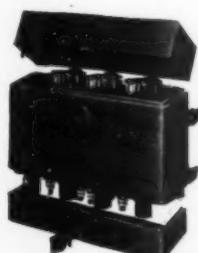


Fig. 1.—Holtzer-Cabot Spark Plug.

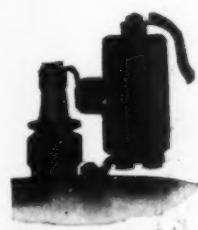


Fig. 2.—Seeley Ignition Coil.

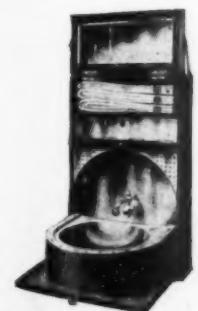


Fig. 3.—Arrow Fold-ing Lavatory.

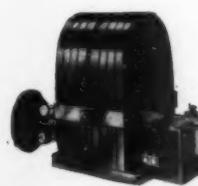


Fig. 4.—J. S. Magneto.



Fig. 5.—Twingrip Wrench.

Holtzer-Cabot Spark Coil (Fig. 1).—Holtzer-Cabot Electric Company, Brookline, Mass. The unit principle is retained in this coil and the hot, live flame which it delivers is due to the high velocity of the vibrator armature and the wide adjustment which intensifies the spark. A safety spark gap is provided and in addition to this, high tension plug contacts which furnish a reliable means of testing. The secondary leads are connected to the plugs and are easily removed from the coil box, causing the spark to pass where it can be easily seen through the glass tube. The throw-over switch reverses the current polarity and prevents pitting of platinum points. The prices range from \$10 for a single unit to \$72 for a double row six coil outfit.

* * *

Seeley Ignition System (Fig. 2).—High Frequency Ignition Coil Company, Detroit, Mich. The main feature of this system is the oscillatory spark given at the spark plug. Each discharge consists of several hundred distinct flashes which surge across the plug points at the rate of about one million per second. It is claimed that soot upon the plugs does not affect the action of the system. The complete outfit consists of a small condenser set, a circuit breaker in place of the ordinary timer, and one small coil or oscillatory transformer for each cylinder. These coils, as shown in the illustration, are placed upon the cylinders close to the plugs and are but 2 inches in diameter by 1½ inch. The prices for the complete outfit range from \$27.50 for a single cylinder type to \$65 for a six-cylinder type.

* * *

Arrow Special Folding Lavatory (Fig. 3).—A. B. Sands & Son Company, 22 Vesey St., New York. This folding lavatory is built especially for use in launches and cruisers where space is limited. It is made in different woods, lined with copper heavily nickel plated, and is fitted with a self-closing swing pattern faucet, with a nickel plated shelf for towels, etc. The supply is taken from a water tank placed in any desired position in the boat and the waste is cared for through a nickel plated pipe outlet. The net weight of the lavatory is 18 pounds and it can be finished to match any style of interior finish. When closed the dimensions are 22½ inches in height, 13/4 inches in width, and 4½ inches in depth.

* * *

J. S. Magneto (Fig. 4).—The Holtzer-Cabot Electric Company, Brookline, Mass. This is a low tension generator especially designed and constructed for work in connection with high tension vibrating jump spark coils, although it can be used equally well with make-and-break ignition. In the latter case the ordinary spark coil is used. The J. S. 8 magneto, here illustrated, is wound to give 6 volts at 1,500 revolutions and the current output is approximately 3½ to 4 amperes when equipped with governor pulley. If it is equipped with an ordinary belt pulley or a friction drive the current output is 6 volts larger. Under many circumstances a few 6 c.p. electric lights can be operated in addition to the coil.

* * *

Twingrip Wrench (Fig. 5).—Twin Grip Wrench Company, 25 Old Slip, New York. This tool combines seven different wrenches, including an alligator wrench, and a screwdriver. It is a high grade tool made of tempered cast steel and cannot rust, so it may be carried in any convenient place. The instrument consists of four double end wrenches held in a yoke and tightened by a cam. The length when closed is 6 inches, when open is 9 inches and the weight is but 9 ounces. To operate the wrench it is only necessary to raise the cam lever, extend the wrench required, and lower to lock. The price is \$1.

Connecticut Magneto Switch (Fig. 6).—Connecticut Telephone & Electric Company, Meriden, Conn. This switch is fitted with a Yale lock so that the ignition systems cannot be tampered with by unauthorized persons. The lock is practically a double one, inasmuch as the switch cannot be operated when the plug is removed. As will be noted from the illustration, the lock is so placed that it does not in any way disfigure the appearance of the switch, and it assures to the owner the satisfaction of knowing that he is safe in leaving his craft anywhere.

* * *

Becco Terminal (Fig. 7).—The Beck Company, Rockville Centre, N. Y. This new terminal, as can be seen from the illustration, embodies a sparking gap which can be used to indicate whether or not there is a sufficient amount of current flowing to the plug. A block of fiber is clamped between the front and back parts of the terminal and the connection is made again when the lever is closed, automatically locking the terminal to the plug so that it cannot be shaken loose. The terminal is attached to the secondary cable in the ordinary manner except that no soldering is necessary. The price is 15c. each.

* * *

Phillips' Timer (Fig. 8).—Harder's Fire-proof Storage and Van Co., 40th St. and Calumet Ave., Chicago. This timer is of the make-and-break type and is non-rotary, the parts being operated successively and radially through slots by means of an eccentric pin. It may be applied to a reversible engine, or if desired it may be so arranged that the engine can run in but one direction, the contact being thrown off as soon as the engine reverses. All parts are made interchangeable and the instrument may be easily taken apart and assembled. The price ranges from \$5 for a single cylinder timer to \$7 for four cylinders.

* * *

Fanning Whistle Outfit (Fig. 9).—Fanning & Farrell, Providence, R. I. This whistle outfit weighs but 12 pounds, occupies but 6 inches of space and will give a 30 pound air pressure instantly and as long as the driving wheel of the blower is in contact with the flywheel of the engine. The outfit is equipped with a bronze deck plate and the relief valve which is furnished permits any size from a one inch to a three inch whistle to be used. The whistle is a two-way instrument, giving an alternating sound which it is stated can be heard for over two miles. The price of the outfit is \$25.

* * *

Monitor K-D Frames for Business Boats.—Monitor Boat and Engine Co., Newark, N. J. A new departure in knock-down frames is being made by this company, as they are now manufacturing a complete line of frames for business boats designed expressly for passenger traffic, freight boats, excursion boats, etc., where the business is not sufficiently large to warrant the use of steam vessels. The frames form a handsome line and inasmuch as they are designed especially for the purposes for which they will be used they are complete in every detail.

* * *

Coates Sand Paper Head (Fig. 10).—Coates Clipper Mfg. Co., Worcester, Mass. This outfit is designed to meet the demand for a sand paper head with a soft, felt backing in which the sand paper can be replaced instantly, and is a most useful addition to the equipment of the large boat house where repairs are made by the owner. It is connected to a motor by a flexible shaft and runs at the same speed as the shaft. It may if desired be equipped with emery cloth and canvas cloth for finishing metal surfaces, and the paper may be removed and inserted so rapidly that it is necessary to have but one head. The price of the complete outfit is \$35.



Fig. 6.—Connecticut Magneto Switch.



Fig. 7.—Becco Terminal.



Fig. 8.—Phillips' Timer.



Fig. 9.—Fanning Whistle Outfit.



Fig. 10.—Coates Sand Paper Head.



Fig. 11.—Simplex Ignition Tester.



Fig. 12.—Little Wonder Valve Grinder.



Fig. 13.—Okonite Ignition Wire.

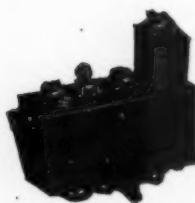


Fig. 14.—Connecticut Hinge Bracket Spark Coil.



Fig. 15.—Sands Water Intake Strainer.

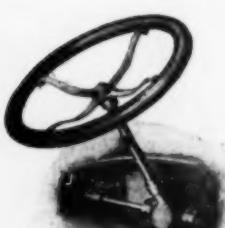


Fig. 16.—Victor Steering Gear.

Simplex Ignition Tester (Fig. 11).—Simplex Sales Company, Newark, N. J. This instrument tells instantly, while the motor is running, the condition of the high tension ignition system, and in case of ignition trouble it indicates whether the magneto, coil, wires or plugs are at fault. It detects all faults in the ignition system and tells whether the gap in the plug is too large or too small for proper firing, and since it indicates this under working conditions, the results are accurate and the faults simple to correct. The instrument is made of polished hard rubber with metal parts nickel plated, and a safety glass protects the spark gap, eliminating danger from an exposed spark. The points of the spark are adjustable on the micrometer principle, giving absolute accuracy. The price is \$2.

* * *

Smith's Little Wonder Valve Grinder (Fig. 12).—The R. & S. Specialty Mfg. Company, Los Angeles, Cal. This tool, which is designed for the rapid grinding of gas engine valves, is operated by a hand crank which automatically turns the valve backward and forward against its seat with a reciprocating motion. The grinder is comprised of a frame carrying a shaft with a cross arm mounted thereon, with a fiber roller on each end. A cam wheel is rotated by the hand crank and this imparts a backward and forward motion to the shaft which carries a chuck on its lower end to receive tools, either a screwdriver or any suitable device to rotate the valve. The price, including a box of valve grinding compound, is \$3.50.

* * *

Okonite Ignition Wire (Fig. 13).—The Okonite Company, 253 Broadway, New York. This ignition wire is made in six different sizes, and also in primary multiple conductors, both braided and plain, and the conductors are scientifically stranded, as will be noted from the illustration. They consist of 37 strands of No. 29 wire, making the conductivity No. 14 A.W.G., a construction securing the greatest possible strength and flexibility. The insulating material is Okonite, a material containing at least 30% pure Para rubber, and the wall of insulation is increased or diminished according to the voltage to be carried. It is stated that Okonite is not affected by either salt or fresh water, or commercial acids or alkalies, and it has a wonderful resistance to heat, oil and grease.

* * *

Connecticut Hinge Bracket Spark Coil (Fig. 14).—The Connecticut Telephone and Electric Company, Meriden, Conn. This coil has just been placed upon the market and is especially designed for bulkheads of motor boats where space is valuable and where it is not possible to remove the units of the coil without in many cases taking the coil off the bulkhead. By means of the hinge bracket it is possible to swing the coil back from the bulkhead to such a position that the units can be easily removed. All the coil units are interchangeable without touching a wire connection, and with the use of the swing bracket advantage can be taken of this important point in coil construction.

* * *

Sands High Speed Water Intake Strainer (Fig. 15).—A. B. Sands & Son Co., 22 Vesey St., New York. This instrument is made of cast bronze and consists of a heavy pattern combination inlet connection with strainer and scoop. It can be used on all inlets and is particularly adapted for the circulating water connections for high speed launches. It is made with a special flange containing a cup strainer and pocket which are so formed that water is readily scooped in when the boat is going at any speed. It is made in five sizes from $\frac{1}{2}$ inch to $1\frac{1}{2}$ inch, ranging in price from \$2.25 to \$4.50 with iron pipe and from \$2.65 to \$5 with lead pipe.

* * *

Victor Steering Gear (Fig. 16).—The Loew Mfg. Co., Cleveland, O. This gear has been designed with the idea of making it adaptable for all boats having automobile control, requiring a steering gear that will permit two or more passengers, including the steersman, on the thwartship seat. This gear may be moved to either side or the center of the boat, the steering being accomplished on the same gear. The apparatus is constructed of brass and bronze throughout and the wheel is finished in ebony. It may be placed at any angle or in any position convenient and the list price of the complete outfit is \$15.

Eames Socket Wrenches (Fig. 17).—Eames Tool Company, Lynn, Mass. A ratchet attachment has recently been added to these wrenches intended for use on nuts in especially inaccessible positions. It is reversible and is used by interposing it between the regular handle of the set and the socket, as shown in the illustration. The ratchet attachment used in conjunction with the swivel joint of the handle, serves as a universal joint, thus obviating the necessity of a separate fixture for that purpose. The attachment is now included with the regular set of wrenches which lists at \$9.

* * *

Brosnihan Pipe Wrench (Fig. 18).—The Brosnihan Wrench Co., Worcester, Mass. This wrench is made with either a wood or a steel handle and may be adjusted and operated with one hand, leaving the other free to hold and guide the pipe. It has a wedge and screw attachment, giving a very strong grip, yet it can be set so that it will not crush a thin pipe. The jaws are made of tool steel, hardened, and tempered in oil, and the bar sleeve and screw are case-hardened by a special process. All wrenches over 12 inches in length have steel handles, hollowed at the sides. They are made in 8, 10, 12 and 18 inch lengths, costing \$2, \$3, \$4 and \$5, respectively.

* * *

Atlas Valve Remover (Fig. 19).—Atlas Machine Co., Providence, R. I. This instrument is built upon an entirely new principle and can be instantly adjusted by the use of one hand, when the ratchet holds it in any desired position. After the tool is once adjusted it is not necessary to touch it until after the valve is replaced and the pin finally put in. To operate, the instrument is first closed so that the jaws are together, and the lower jaw is rested upon the valve plunger sleeve. The upper jaw is then opened until it touches the washer of the valve spring. The tool may then be opened until the spring is raised as high as is necessary, when the ratchet holds it in position.

* * *

National Steel Snips (Fig. 20).—National Cutlery Company, Philadelphia, Pa. These snips have just been placed upon the market especially for the automobilist and motor boatman. The instrument is in reality a combination of both shear and snip and can be used for cutting light metals, rubber, leather, etc. The blades are oval to facilitate cutting small circular objects such as washers, gaskets, etc., and the entire instrument is made from a solid drop forging from high grade cutlery steel. It is finished in heavy nickel plate and retails for \$1.50.

* * *

Stay Shiny (Fig. 21).—Fred A. Schmoeger, Sterling, Ill. This is a transparent fluid that prevents tarnish and oxidation of all exposed metal parts by forming a thin invisible coating over the surface, which is not affected by water or heat. The finish produced is lustrous and hard with the smoothness of glass, and its use preserves the original high polish of the metal indefinitely. It dries in a few moments, can be easily removed when desired, does not get sticky, and will not chip or peel off. It is put up in pint cans, enough for a year's supply for a craft of considerable size, and sells at \$2 per can with applying brush.

* * *

Ferro Improved Reverse Gear.—Ferro Machine & Foundry Company, Cleveland, O. Although this gear has been upon the market for some time it has recently been improved to such a degree that it has a number of distinct advantages. Special attention is given to the rotating parts which are all perfectly balanced and the geared pinions run in a vat of light grease, eliminating friction so far as possible. The internal clutch rings grip the drum of the gear case when the clutch lever is pushed forward, and when the lever is pushed toward the reverse the propeller shaft runs at three-fourths of the engine speed. The reverse gear is attached to the crankcase of the engine, insuring perfect alignment.

* * *

Sure Spark Plug (Fig. 22).—Sure Spark Plug Company, Lancaster, Pa. This plug is made with a removable ball at the point of contact which is intended to do away entirely with all deposits, thereby avoiding carbonizing. An adjustable electrode makes the plug equally well adapted for magneto or battery, and owing to the fact that the insulator is inverted the tendency is always to tighten rather than loosen. The price is \$1.



Fig. 17.—Ratchet Attachment for Eames Wrench.



Fig. 18.—Brosnihan Pipe Wrench.

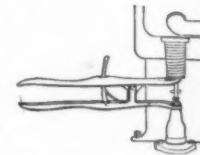


Fig. 19.—Atlas Valve Remover.



Fig. 20.—National Steel Snips.



Fig. 21.—Stay Shiny.

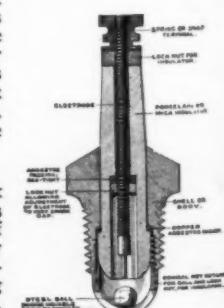


Fig. 22.—Section View of Sure Spark Plug.

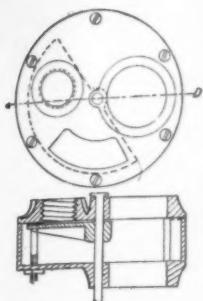


Fig. 23.—Combination Whistle Valve and Cut-out.



Fig. 24.—Anchor Vacuum Watch Holder.

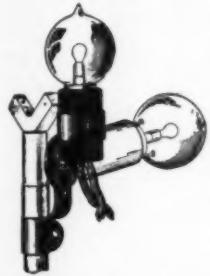


Fig. 25.—Gil-Bo Electric Lamp Bracket.

Combination Whistle Valve and Cutout (Fig. 23).—T. F. Burke, San Diego, Cal. This device was invented by T. F. Steenrod, of Freeport, Ill., and consists of a casing having inlet and outlet ports and a movable semi-circular plate within, capable of being rotated in either direction. The whistle and cutout ports are both closed when the disk is in the neutral position and either port may be opened by a quarter turn of the disk. The openings are of the same size as the exhaust pipe so that there can be no back pressure. The upper diagram shows the appearance of the device with the action of the slide and the lower diagram shows a sectional view along the line CD. The edges of the movable disk are beveled so that any foreign matter which may collect on the valve seats is scraped off.

* * *

Anchor Vacuum Watch Holder (Fig. 24).—Metal Specialties Mfg. Co., 427 W. Randolph St., Chicago. This watch holder is made of specially prepared non-blooming rubber and therefore will not tarnish the watch. It is made in three sizes, to fit all standard watches and will last indefinitely. The watch is easily inserted in the case so that only the face is exposed, and when the edge of the holder is slightly moistened it will hold firmly to any glass or polished surface desired. The holder may be unfastened by pulling up gently on the rubber tip just beneath the watch stem. The price is \$1.

* * *

Gil-Bo Electric Lamp Bracket (Fig. 25).—Metal Specialties Mfg. Co., 427 W. Randolph St., Chicago. This bracket is made for both oil and gas burners and is of spring brass, highly polished and nickel plated. It is provided with notches which hold the lamp securely in either a vertical or horizontal position and when the electric lamp is not in use it is turned completely out of the way so that the heat cannot damage it. The illustration shows clearly the method of attaching, separate brackets being furnished for oil or gas burners. The price is 35c. for the oil burner type and 50c. for the gas burner type. The bracket will be found very valuable since, in case of emergency, the electric lamp can be turned out of the way and the oil or gas light brought into use immediately.

Wallmann Automatic Measuring Pump (Fig. 26).—Wallmann Mfg. Co., 287 Fifth Street, Milwaukee, Wis. This pump is simple and effective in operation and is designed to furnish a serviceable pump in connection with a tank which will be economical and accurate. The use of this tank and pump makes it possible to preserve an accurate and permanent record of every pint of gasoline used and prevents waste. The gasoline is well stored through the use of this system and therefore retains its original high volatility.

* * *

The Detectophone (Fig. 27).—Thomas A. Miller, 30 Old Slip, New York. This instrument is manufactured by the Millet Signal Company, of Boston, and is designed to fill the need for a portable submarine signalling apparatus. Two different styles of terminals or contact points are furnished for different shaped hulls, and when these are applied to the inside of the hull as far below the waterline as possible submarine sounds may be easily picked up. The direction of the vessel's course may be distinguished by applying the instrument to both sides of the vessel in turn to locate submarine bells, etc. It is stated that the beating of a steamer's screw can be heard at as great a distance as two and one-half miles.

* * *

Delta Spark Plug Binding Nut (Fig. 28).—Delta Manufacturing Company, Bloomfield, N. J. This new "Universal" top, which is made to screw on any Delta plug in place of the usual binding nut, is made of brass and takes the ordinary cable terminal in the same way as the regular nut. It will take all styles of cable terminals in common use since it has a cut-out section for the purpose of taking several forms of spring clips of the Rajah type, while the straight round top takes the French style of clip. The manner of attaching can be seen from the illustration. The multiplicity of styles of cable terminals sometimes makes it difficult for a person buying a new plug to obtain one to fit his terminals, and this binding nut has been designed to overcome the difficulty. The company does not make the terminals, but they are shown to illustrate the method of attachment.



Fig. 26.—Wallmann Gasoline Pump.



Fig. 27.—The Detectophone.

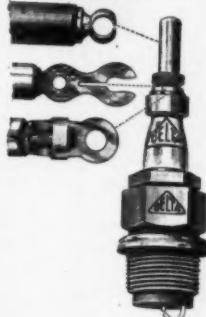


Fig. 28.—Delta Spark Plug Binding Nut.

New Jersey's Registration Law.

All Motor Boats Operated on the Inland Waters of the State Must be Registered.
The Cost of the License Depends Upon the Tonnage of the Boat.

THE New Jersey Legislature of 1910 passed an act, approved on March 11th, requiring that all motor boats operating on the inland waters of the state and not licensed for the carrying of passengers or freight or for towing, must be registered each year with the Chief Inspector of Power Vessels, whose office is at Lake Hopatcong, New Jersey.

This new act does not in any way conflict with the Federal laws, but is made with the idea of requiring motor boats upon inland waters to conform to the law as enforced upon Federal waters. Tidewater vessels are, of course, not obliged to pay this registration fee unless they navigate the waters of New Jersey State above tidewater, such as the Passaic River above the falls and other similar waters. The act is as follows:

A supplement to an act entitled "An act to regulate the use of power vessels and boats navigating the waters within the jurisdiction of the State, above tidewater, and to provide for the inspection and licensing of power vessels, their masters, pilots and engineers," approved April nine, nineteen hundred and six.

Be it enacted by the Senate and General Assembly of the State of New Jersey:

1. No power vessel shall be navigated upon the waters within the jurisdiction of this State, above tidewater, where power vessels licensed to carry passengers are navigated, without first being registered, and without

having her name painted on her stern, on a black background in white, yellow or gilt letters, of not less than three inches in length, or in letters of less length placed elsewhere on the boat upon permission of the Chief Inspector of Power Vessels obtained at the time of registering. Such registration shall be made in the following manner: A statement in writing shall be made to the Chief Inspector of Power Vessels containing the name and address of such owner, and the name of the boat, which name shall not be a duplicate of the name of any boat already registered, together with a brief description of the character of the same. The applicant shall pay to the said Chief Inspector a fee of one dollar for such registration, which fee shall be turned over to the treasury of the State for the use of the State. The Chief Inspector of Power Vessels shall issue for each power vessel so registered a certificate properly numbered, briefly describing such vessel, and stating that the same is registered and that her name is painted on her stern, or otherwise, as herein provided in accordance with the law, and shall cause the name of such owner, with his address, the name of the boat, and the numbering of his certificate and a description of such vessel, to be entered on a record to be kept by the Chief Inspector of Power Vessels in alphabetical order. Every registration shall expire and the certificate thereof become void on the thirty-first day of De-

cember of each year.

2. Any master or any owner or owners who shall violate any of the provisions of this act, by navigating or allowing any such vessel to be navigated without first having the same registered, and without displaying the registered name thereof as hereinabove provided, shall, upon conviction thereof, under the proceedings and in the manner as provided for in the act to which this is a supplement, and the amendments and supplements thereto, all of which proceedings the complaint, arrest, conviction, fine, etc., shall apply to the violation of this act, be subject to a fine of not less than five dollars and not more than fifty dollars; provided, that this act shall not in any way apply to any power vessel licensed to carry passengers or freight for hire or towing for hire.

3. The Chief Inspector, appointed under the provisions of the act to which this act is a supplement, and his successors in office, shall maintain an office at or near Lake Hopatcong, and for the purpose of defraying the rental of said office and necessary incidental expenses attached to the maintenance of the same, the sum of five hundred dollars is hereby appropriated.

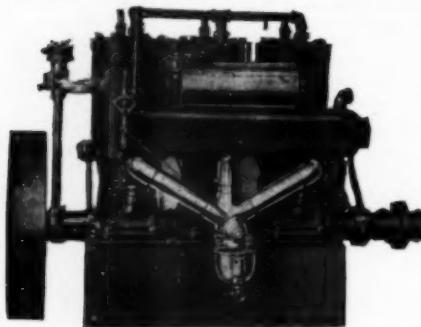
4. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed, and this act shall take effect immediately.

Approved March 11, 1910.

Motors for Motor Boats.

New Bridgeport "Semi-Speed."

In addition to their regular medium speed models the Bridgeport Motor Co., or Bridgeport, Conn., have this season brought out two new models of the semi-speed type capable of operating at from 600 to 800 r.p.m. continuously. These new models, one of two and



The 3 cylinder 12-16 H. P. Bridgeport.

the other of three cylinders, each have a bore and stroke of $4\frac{3}{8}$ and 5 inches, respectively and are rated at 8-10 horsepower and 12-16 horsepower when turning at from 500 to 700 r.p.m. The weights respectively are 325 lbs., and 425 lbs., making them adaptable to boats of the semi-speed type. The cylinders are cast in units making them independent in the matter of removal for repairs and replacement. They are of the split base type and are securely fastened to a one-piece bed plate which is patterned to form the lower half of each cylinder. Cylinder heads and exhaust manifolds are water jacketed and the former are detachable. Water circulation is provided by a large bronze plunger pump located on the rear of the motor. Lubrication of connecting rods, wrist pins and pistons is provided for by an automatic oiling system.

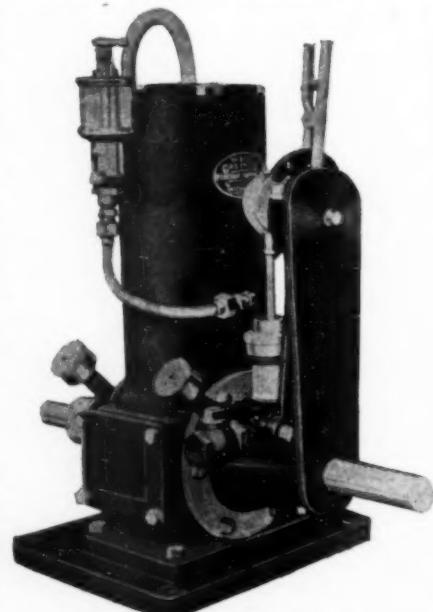
New Van Blerck Racers.

To meet the demand for a high speed racing motor the Van Blerck Motor Co., of Detroit, Mich., have recently put upon the market two new models, one a 4-cylinder of 50-60 horsepower and the other, illustrated herewith, a 6-cylinder model rated at 80-90 horsepower. These models weigh approximately 600 and 800 pounds, respectively, and develop their rated horsepower at about 1,000 revolutions. They are of the 4 cycle type having inlet and

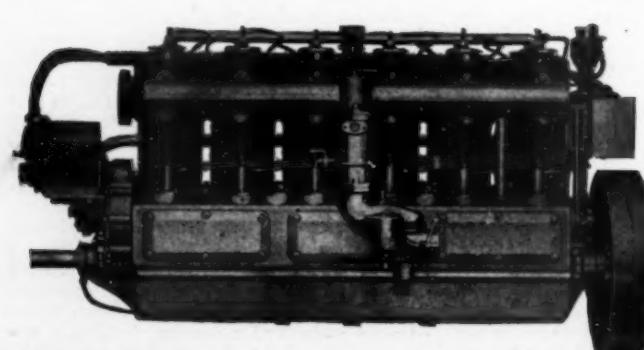
angle at which the motor is installed. There have been test cases where the motor was installed at an angle of 35 degrees and it was found after a considerable run that no oil had run from the upper compartments or leaked from the lower end bearings. The dimensions of the "six" are as follows: Bore, $5\frac{1}{2}$ inches; stroke, 6 inches; length over all, 80 inches; height from center of shaft, $23\frac{1}{2}$ inches. This model is made only with aluminum crankcase. Ignition is by gear driven Bosch magneto with an auxiliary battery system and lubrication is accomplished by a forced feed system also gear driven.

The Model E Weco.

The illustration is of the 5 horse power model E Weco manufactured by the C. T. Wright Engine Company, of Greenville, Mich. This engine is of the 2 cycle, 2 and 3 port type. The circulation is secured by a direct acting pump connected to the crank shaft with a positive drive. The controller device gives entire control of the engine, starting, stopping and reversing with all changes of speed are accomplished by the manipulation of one lever.



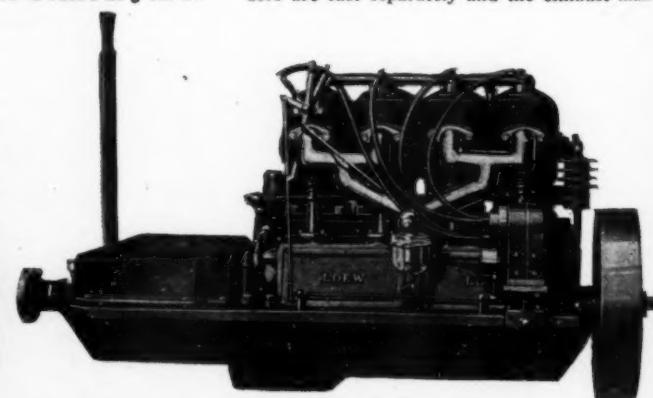
The Model E Weco is rated at 5 H. P.



The new Van Blerck 80-90 H. P. six cylinder racer weighs 800 lbs.

exhaust valves on opposite sides of the cylinders, easily accessible by removing bronze plugs at the tops of the cylinders. The main bearings are supported by webs of a special design which prevent the oil going from one compartment to the other irrespective of the

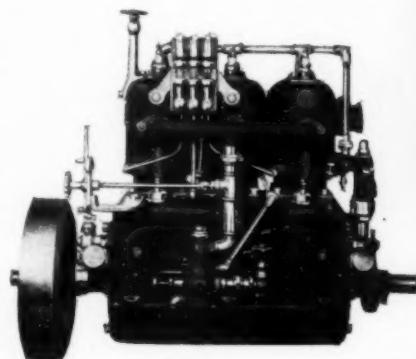
carbureter is effective and is guaranteed to maintain a homogeneous mixture regardless of the engine speed. The cylinder has a bore of 4 inches and the stroke is 4 inches and the rating of 5 horse power is taken at the normal speed of 650 R. P. M.



The 25 H. P. Loew Victor with reverse gear incorporated.

The Late Doman Models.

We are showing in the accompanying illustration one of the latest models turned out by the H. C. Doman Company, of Oshkosh, Wis. These motors are all of the 4 cycle type and are built in the following sizes: 2-cylinder, 5 h.p.; 3-cylinder, 7 h.p.; 2-cylinder,



The three cylinder, four cycle Doman.

10 h.p.; 3-cylinder, 15 h.p.; 4-cylinder, 20 h.p.; 4-cylinder, 30 h.p.; 6-cylinder, 30 h.p.; 6-cylinder, 45 h.p.; 4-cylinder, 55 h.p.; and 8-cylinder, 200 h.p. The heavy duty models are built in 2, 3 and 4-cylinder sizes of 20, 30 and 40 h.p., respectively. All these motors develop their rated horsepower at a moderate speed. The working parts within the crankcase are easily accessible.

The Loew Victor.

The Loew Mfg. Co. have concentrated their efforts on a single 25 horsepower model of the 4-cylinder, 4-cycle type shown in the accompanying illustration. The cylinders are of $4\frac{3}{4}$ inches bore and $5\frac{1}{2}$ inches stroke and the speed ranges from 150 to 1,000 revolutions. Designed as an all-round machine it has been used with equal success for racing and for fast cruising boats. For the former the engine may be had with aluminum base which reduces its weight from 1,000 pounds to approximately 800 pounds. The reverse gear is incorporated in the engine base as shown and the length over all is 5 feet. From center of shaft the height is 21 inches. The cylinders are cast separately and the exhaust man-



One of the largest gasoline and oil supply stations along the St. Lawrence is located at Alexandria Bay, New York.

The Motor Boat and Supply Company, of Cleveland, Ohio, have gone into the business this season upon a larger scale and have taken an interest in the manufacture of the Barnes heavy duty engine, a four-cycle motor manufactured especially for heavy fishing and cruising boats. They are also marketing three special launches, 14, 18 and 22 feet in length, selling at \$100 and up.

The Syracuse Gas Engine Company, of Syracuse, N. Y., although they had planned to enter the Peoria Regatta upon July 4th, 5th and 6th, have been unable to get their boat and power equipment ready in time, owing to a rush of business, and have entered instead the regatta of the Western Power Boat Association upon August 30th and 31st.

The Mechanical Devices Company, of Watervliet, N. Y., have been advised by Capt. F. W. Bartlett, head of the department of Marine Engineering and Naval Construction at the United States Naval Academy at Annapolis, that the curriculum next term at the academy will include instruction in the use of Indispensable Motor Boat Devices.

The Monitor Boat and Engine Company, of Newark, N. J., in addition to the new line of knock-down frames for business boats, have disposed of a number of their larger cruiser frames in the vicinity of New York. Smaller frames have been shipped to Florida, and one 23-foot speed boat frame has been sent to Bangkok, Siam.

The Vim Motor Manufacturing Company, of Sandusky, Ohio, have increased their capital stock and are erecting a modern shop with greatly enlarged facilities for the production of Vim motors. They are planning also to manufacture automobile engines.

The Detroit Aeroplane Company is a new corporation under Michigan laws. A separate marine engine department will be maintained and the company will continue the manufacture of the Cox Marine Engine, which company they have absorbed.

The Illinois Valley Yacht Club regatta which was held at Peoria on May 30th was considerably upset by a heavy storm with a wind velocity of from 30 to 40 miles per hour. A number of the races were called off on account of the heavy seas, but in the free-for-all championship of the river, Marguerite, owned by D. W. Voorhees, and equipped with a 100 h.p., six cylinder Scripps motor, won the race with a speed of over 32 miles per hour.

The Mianus Motor Works, of Mianus, Conn., at a recent meeting of the stockholders decided to increase the capital stock from \$100,000 to \$300,000 for the purpose of enlarging the plant. It is proposed to double the capacity of the plant at once and erect a new machine shop and offices. A number of new engine models will be brought out in the fall, and later in the summer new designs in a 20 h.p., two cylinder, a 30 h.p., three cylinder, and a 40 h.p., four cylinder engine will make their appearance.

The New England Engine and Boat Association have issued a booklet describing the fourth annual series of open motor boat races to be held by them upon July 30th and August 20th. The Winthrop course in Boston harbor will be used and also the new Charles River Basin course. Boats are divided into a number of classes and many prizes have been offered both by members of the association and by other individuals. Entries close two days before the race and should be made as soon as possible with Norman L. Skene, chairman, 14 Kilby St., Boston.

The Hydro-Tele-Motor Company, of 90 West St., New York, manufacturers of patented hydraulic motion transmitters, is the name of the concern formerly known as Hanchett & Dannheiser. An eastern factory is being established in New York.

"Devonia," a 25-foot launch equipped with an 8 h.p. Ferro motor, and belonging to Fred Brown, an Englishman living at Victoria Falls, on the Zambezi River, South Africa, is at present the only motor boat in that part of Africa. The district is becoming a center for tourists and Mr. Brown, foreseeing an opportunity, secured a motor boat to take tourists to the falls and other points of interest. Business has increased so rapidly that he is having another boat built.

The Gray Motor Company, of Detroit, which was organized about five years ago, has been absorbed by the United States Motor Company, although the name and corpora-

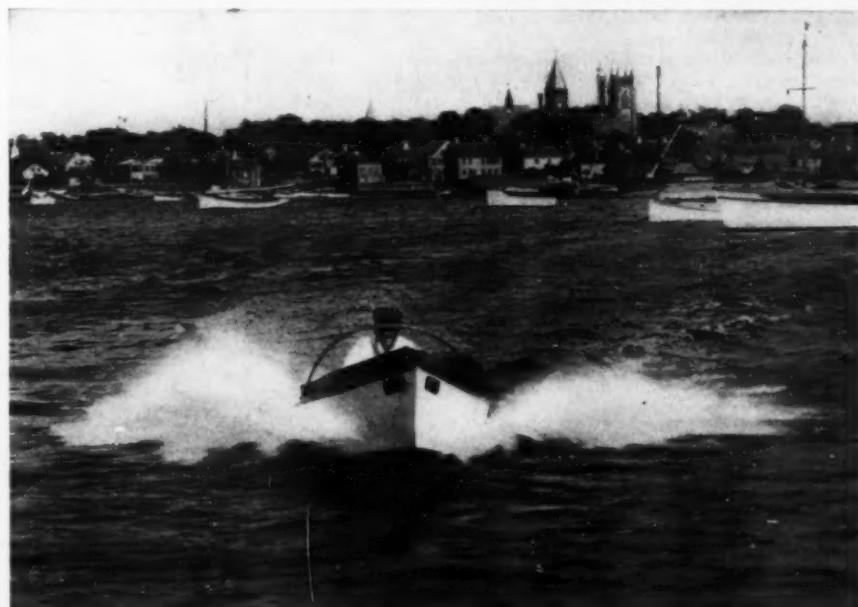
tion of the Gray Motor Company will be retained and the designing, production and selling organization remain intact. The Gray Motor Company is now backed by the \$30,000,000 corporation and ground will be broken immediately for a new plant four times as large as the present one. It is expected that 20,000 Gray motors will be manufactured for 1911.

The Atlantic Company, of Amesbury, Mass., have opened salesrooms in the concourse of the Hudson Terminal Buildings, at 30 Church St., New York City, where they have an exhibit of Gurnet dories, launches and runabouts. The new salesrooms are in charge of R. C. R. Binder, who has managed the New York business for the company for a number of years.

The Briggs and Stratton Company, of Milwaukee, manufacturers of the B. & S. Igniter, have just completed a new plant. The building is of fireproof concrete construction throughout and a great deal of new machinery has been installed.

The Blake Electrical Company, of Boston, are offering to send a Shawmut spark plug upon approval to prospective customers, which they may try in their motor for 48 hours. If the plug is not satisfactory the makers will allow the plug to be returned.

The Sintz-Wallin Company, manufacturers of marine engines, of Grand Rapids, Mich., have increased their capital stock from \$60,000 to \$90,000.



This 18 1/2-foot, V-bottom boat, designed by W. H. Hand, Jr., of New Bedford, Mass., is equipped with a 10 H. P., two-cylinder Erd engine and easily does 17 miles per hour.



Natalie was designed for ocean towing and for withstanding the severe strain of being sent through breakers in shoal water.

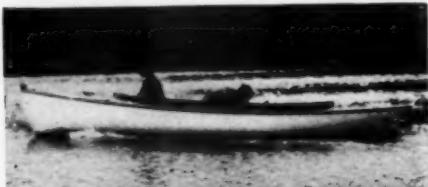
The Havana Race.

(Continued from page 11.)

by. Captain Loveland took a long chance in running his vessel in close to the breakers to make his signals the clearer and then put out to sea. The storm forbade any attempt to make the Inlet, notwithstanding the fact that Commodore Brigham's presence was especially wanted on the shore because of the serious illness of his wife. Every effort was made to signal the news to the boat as she lay far out at sea but the storm was so great that the signals could not be distinguished.

The arrival of the Caliph gave the watchers some relief, but many doubted the fate of the other tiny racers. All through the night the wireless operators at the stations flashed signals to passing steamers to keep close watch for them but they were not reported until in the morning when life saving crews along the coast began to note their progress through the high waves. With the abatement of the waves in the morning, Caliph made a dash through the inlet and into the harbor back of Atlantic City where she tied up at the dock of the Venter Club. Berneyo, when her owner found that she had lost out for the Seaside Yacht cup, which was to go to the winner, did not tarry at Atlantic City but continued on up the Jersey coast to her home port. Ilys and Caroline anchored later in the day at the Seaside Club.

Despite the storm that held the racers back on the last two days of their home run, the time made on the trip is considered remarkably good. Caliph, which required 6 days, 5 hours and 15 minutes to make the run to Havana, landing there first but losing on time allowance came back home in a little over 4 days.



An 18-foot Gurnet Dory has been added to the equipment of Heather, winner of last year's race from Bermuda to New York.

The Power Dory.

(Continued from page 36.)

a carburetor could do any better work. There are two grease cups, one between the flywheel and the cylinder, and one aft of the cylinder; one oil cup just in front of the cylinder. I use Mobiloil and it has worked well, though some might think it a trifle light for a motor boat engine. I keep the engine in good condition, polishing the brass frequently, painting the motor itself, and using cotton waste "early and often." There's nothing like care

to prolong the life of your engine, to say nothing of looks.

Well, I can imagine some "anxious reader," who wants to get down to bed-rock facts on a good boat for small money, saying, "Whew, what did he have to pay for all this?" Here are the figures; they may be dull and dry, but they're what we're after. I will give you my "boat" expense account for the summer of 1908. The boat itself—engine and hull—stood me \$265, a brass whistle \$4, a brass bilge pump (an indispensable piece of the outfit) \$2, an anchor \$4, rope \$3, spray hood \$1.3, freight \$10, cartage \$5, brass bell \$2, oil can 35 cents, batteries \$4.50, lights (galvanized) I had bought enough "brass" things by this time to be wiser) \$5.50, gasoline (seventy-three gallons) \$10.97. A total of something over \$330. That apparently puts my boat out of the \$200-\$300 class, but some of the items were "extras"—in a way, and others could have been obtained much cheaper in galvanized (and thereby avoid much expenditure of time and "elbow grease," shining up the brass!) I also had a small wharf built at a cost of something less than \$20, but that of course was only incidental. You must make up your mind that there will be "incidentals," foreseen and unforeseen.

It will not be hard for you to imagine that last summer was the summer to which I looked forward with the keenest anticipation, for necessarily the first season had been one more or less full of adjustments, experiments, temporary disappointments, mostly caused by my own newness to the game, and yet intermingled with many splendid days of perfect pleasure.

Last summer, however, capped the climax. I have seen many enjoyable seasons and have felt refreshed and revived after the long rest, but to any jaded seeker for health and recreation I can recommend the excitements and thrills of a first or second (or any number) season with a motor dory. Last year no repairs were necessary on the engine and my total expense on the boat for a season of about thirteen weeks was \$20.50. Can you beat that?

The expense was divided as follows: Batteries, \$4.50; ammeter, \$1.35; funnel 50 cents; flashlight, \$1; cylinder oil, 70 cents; oiler, 24 cents; cup-grease, 10 cents; packing, 35 cents; springs, 30 cents; postage, 6 cents; total of \$9.10; and sixty-six gallons of gasoline at a cost of \$11.40—total, \$20.50. Not a very expensive summer, was it?

I have described completely elsewhere the story of all my wife and I did last summer with this little boat, but it would take a large book to contain adequate portrayals of the delights and pleasures it brought us. Suffice it to say, that without the boat my summer would hardly be one "grand sweet song," on the contrary it would be a blank of dull dreariness.

A word to the wise should be more than sufficient. Go thou and do like unto it.

Natalie, a Motor Tug.

Natalie is owned by the Breakwater Company, of Philadelphia, and is used by them in their work of building a jetty at Cape May, N. J. She was designed by Capt. I. A. Watrous, the master mechanic of the company, and was built by M. M. Davis & Son, of Solomon's, Maryland. She is 65 feet over all, with a beam of 18 feet and a least depth of hull of 6 feet 4 inches. Her normal draft is 3½ feet but she can be ballasted to draw 4½ feet.

She is very stoutly built, has watertight compartments, and a very complete machinery outfit. Her propelling power is a 125 h.p. Standard motor, turning a 44 inch propeller, and she has a 3-cylinder auxiliary engine for operating a lighting dynamo, which in turn operates electric motors for running two pumps. A motor on the after deck operates a gypsy windlass which handles 8-inch hawsers.

The work laid out for Natalie will oblige her to proceed off Cape May to meet the deep water steam tugs that will turn over to her 150-foot barges loaded with stone. These barges will then be towed to the jetty that the Breakwater Company is building, and the tug will therefore be obliged to do not only ocean towing, but, in approaching the jetty, she will frequently have to go into the breakers.

New Motor Boat Law.

(Continued from page 13.)

prescribed. Besides the usual fire extinguishers, suitable chemicals, or bags of coarse flour or sand, will serve the purpose.

LICENSED OFFICERS.

7. Motor boats of over 15 gross tons and over 65 feet in length engaged in the carriage of passengers or freight for hire must be inspected by the United States local inspectors of steam vessels and must carry a licensed engineer and a licensed pilot.

DOCUMENTS AND NAME.

8. All motor boats of over 5 net tons engaged in the carriage of freight or passengers



Graychen, an 18-foot craft with a 3-foot beam, does 15 miles per hour with a 3 H.P. Gray motor.

for hire must be documented; that is to say, licensed by the collectors of customs. Vessels under 5 net tons are not documented in any case. The license of the vessel obtained from the collector of customs (designated a document) is additional to and must not be confounded with the license required for the operator of a motor boat.

Documental vessels must have name and home port on stern and name on each bow. Tonnage measurement is necessary only in case of vessels requiring to be documented.

While the law does not require it, the Department recommends that the name be conspicuously displayed on undocumented motor boats.

COPIES OF RULES.

9. Motor boats are required to have on board two pamphlets or circulars of the rules which must be observed by them, which will be furnished by local inspectors of steam vessels on request.

STEAM VESSELS.

10. The change in the law concerning licensed officers of steam vessels will be the subject of a separate circular.

BENJ. S. CABLE,
Acting Secretary.

MOTOR BOATING

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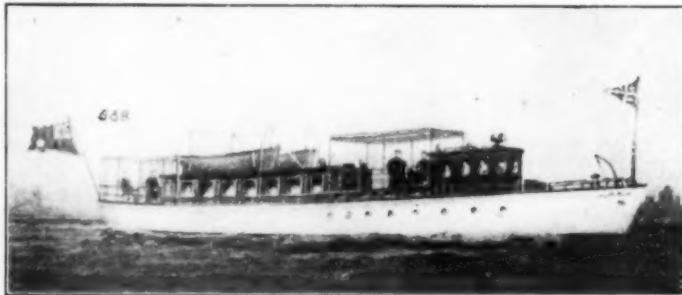
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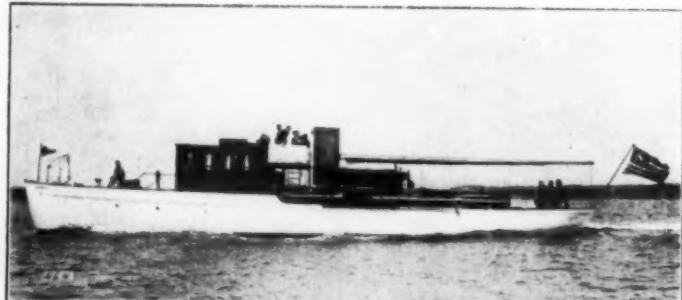
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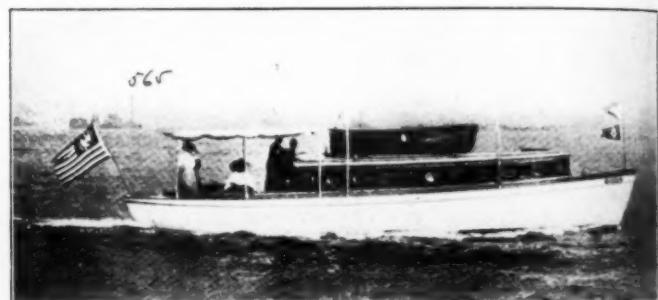
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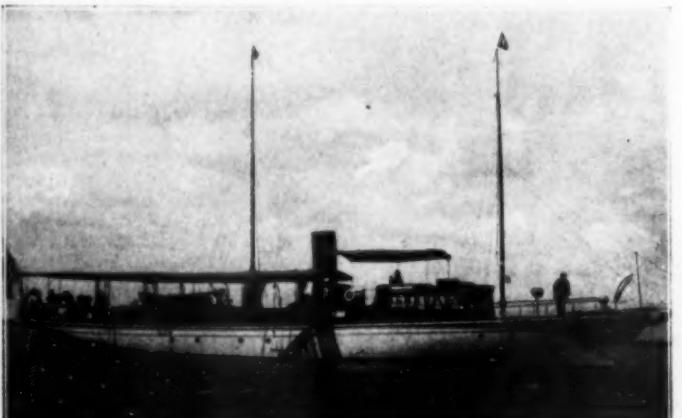
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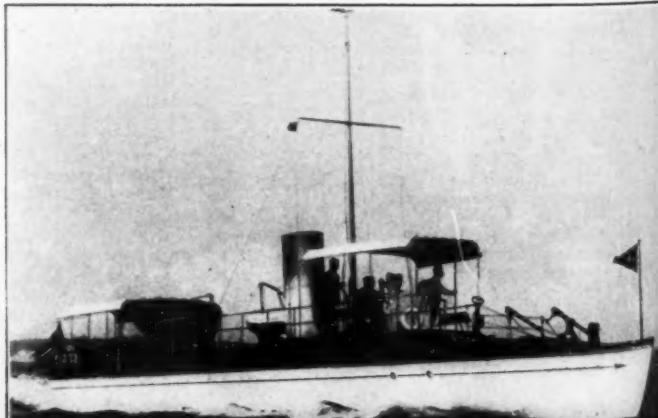
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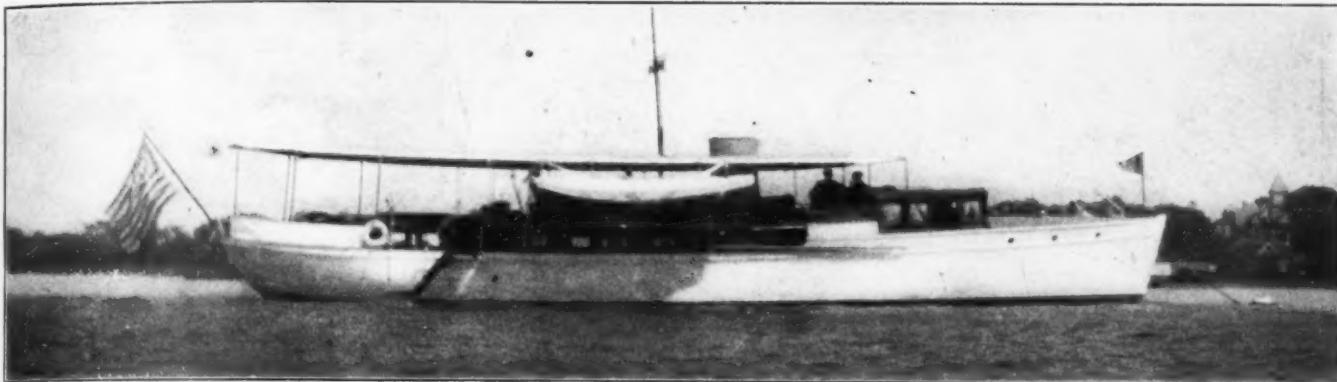
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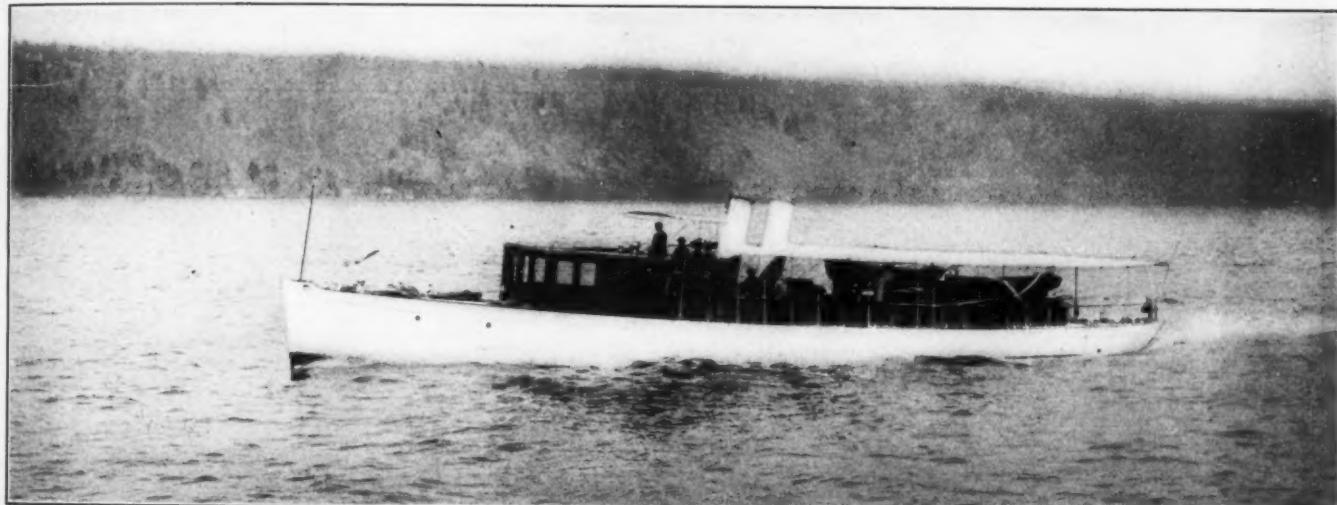
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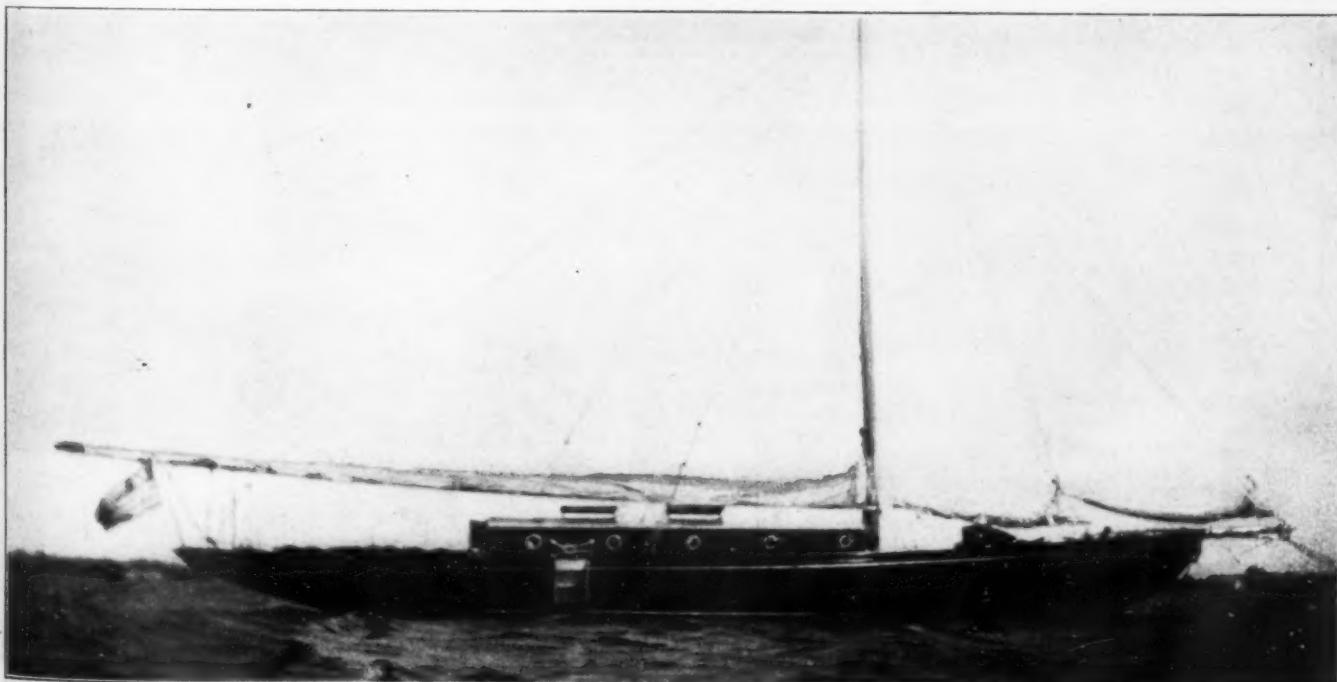
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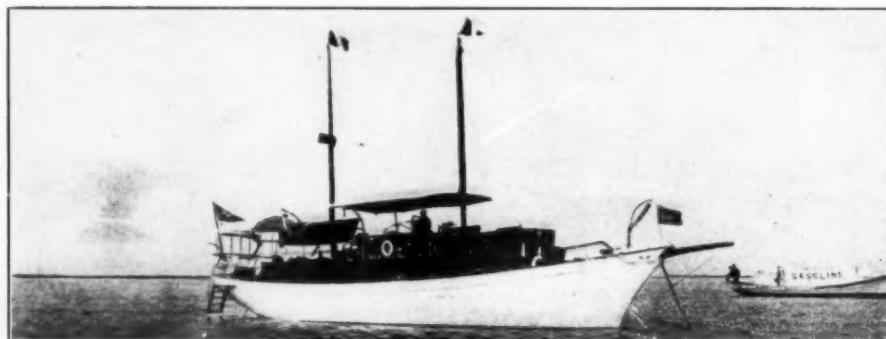
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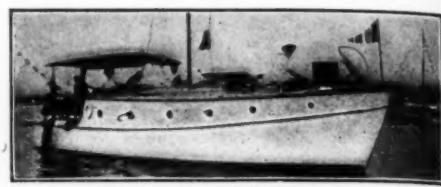
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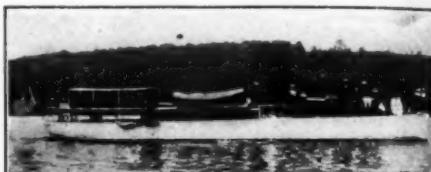


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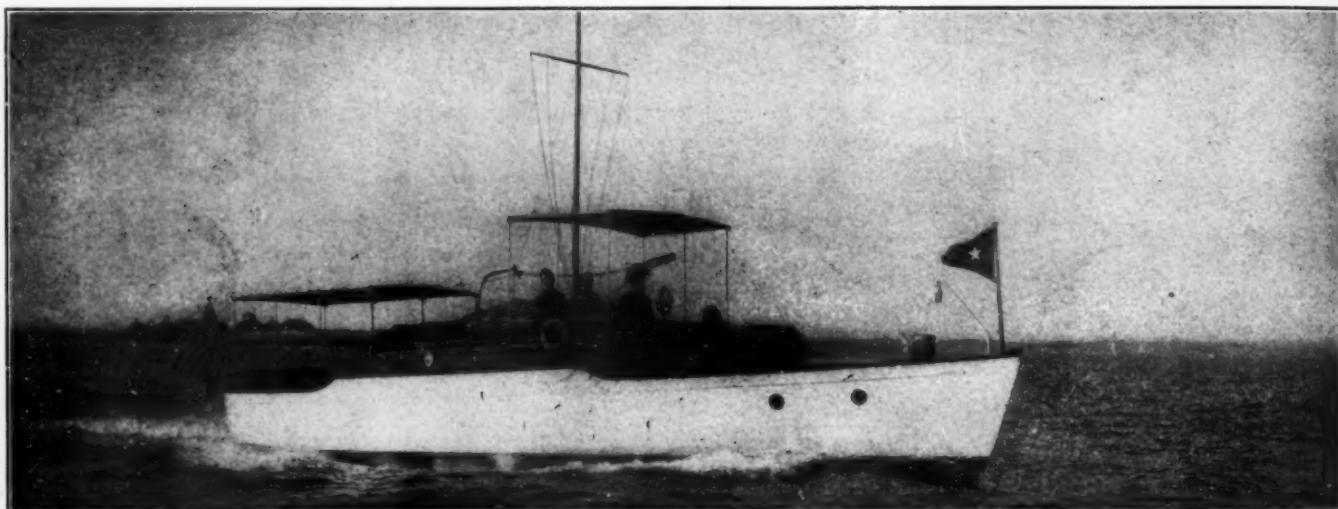
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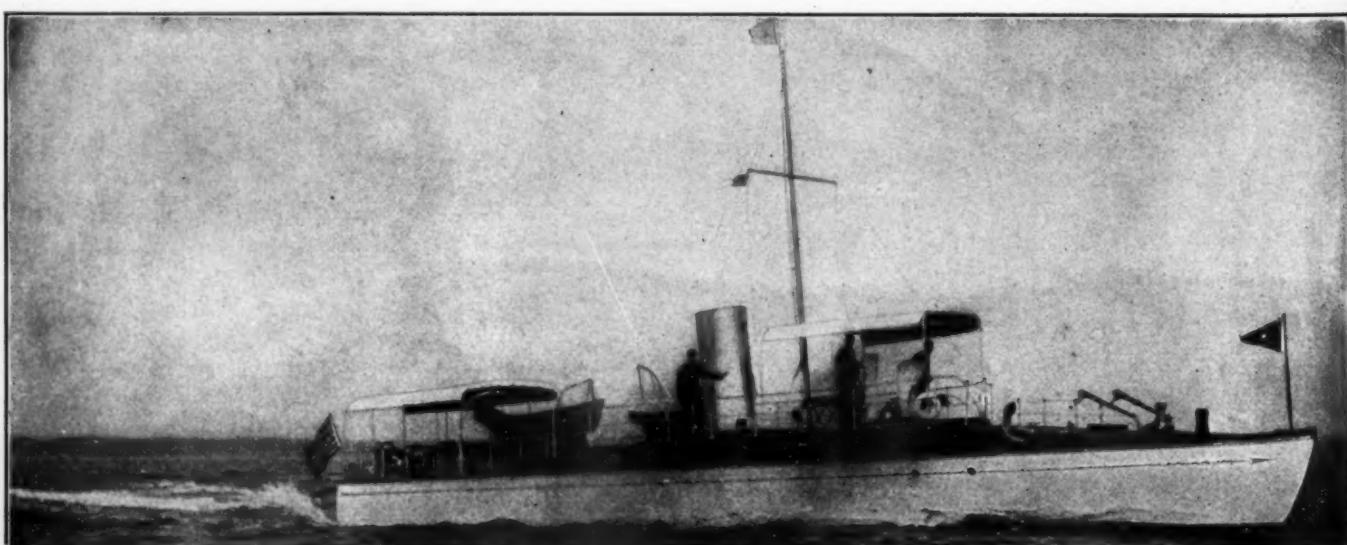
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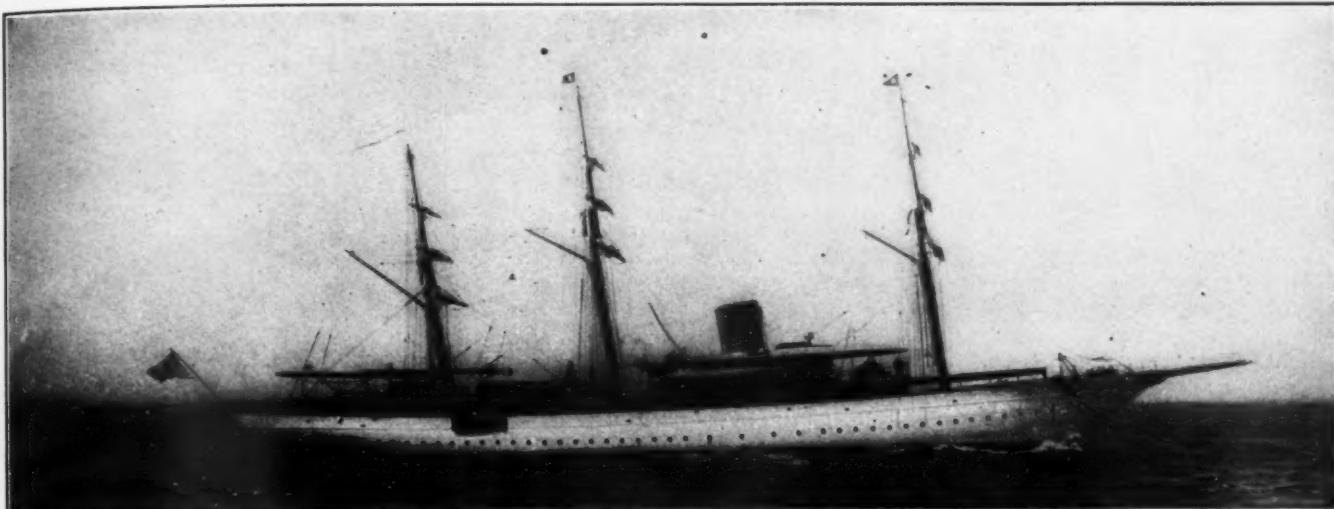
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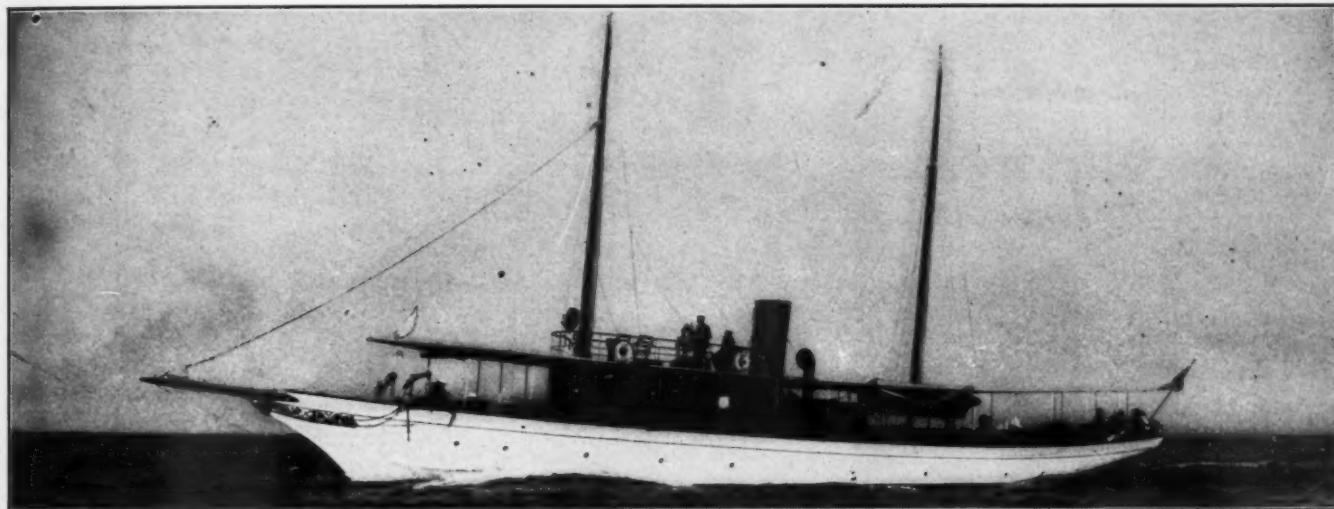
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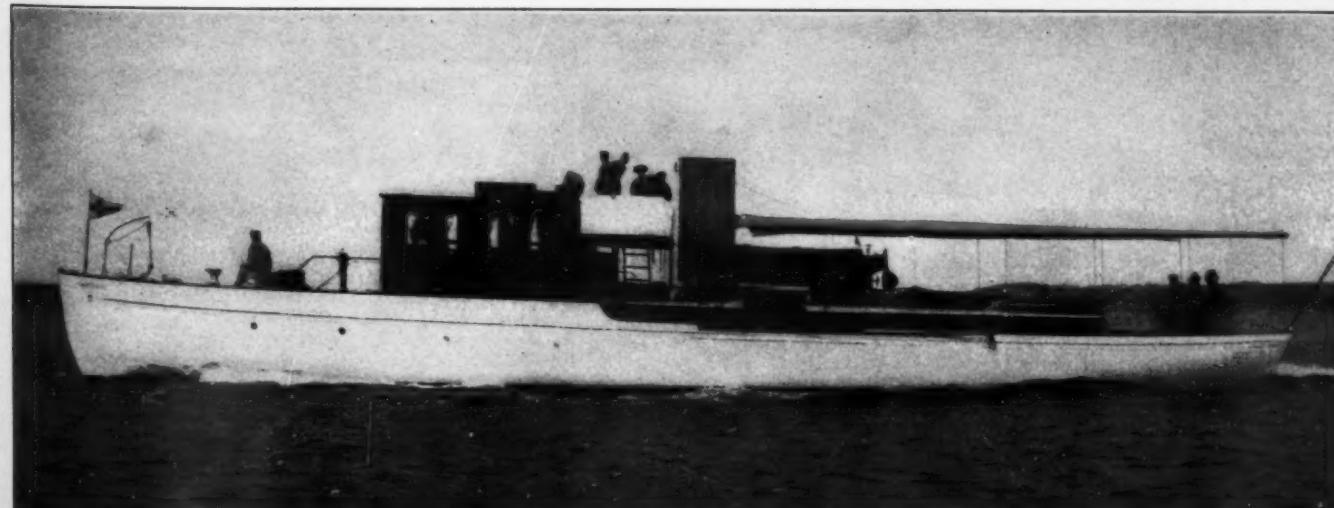
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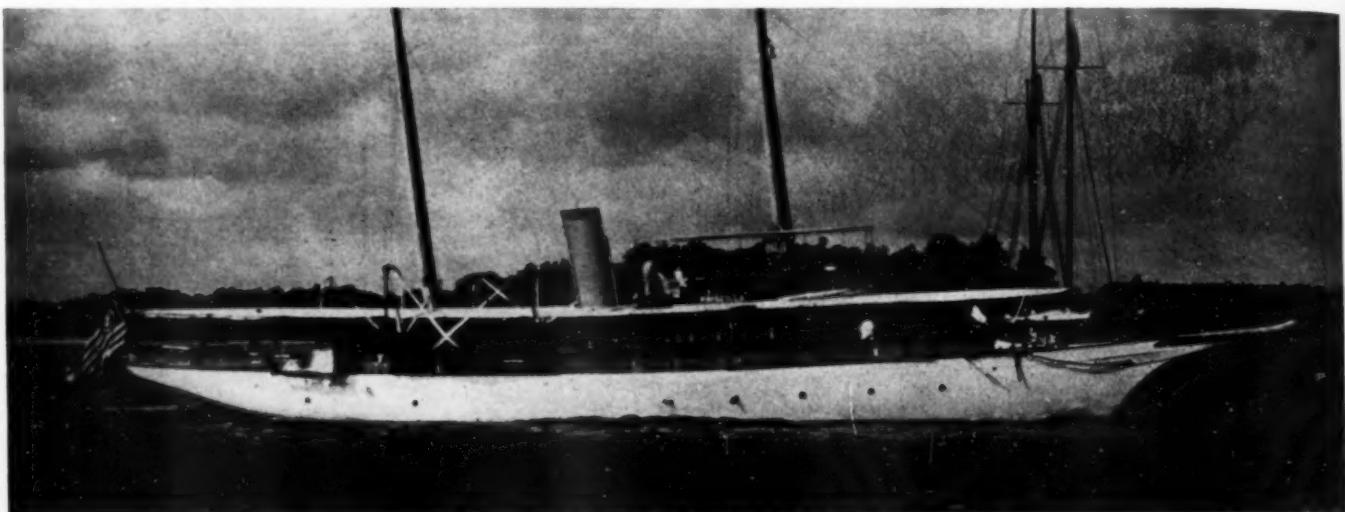
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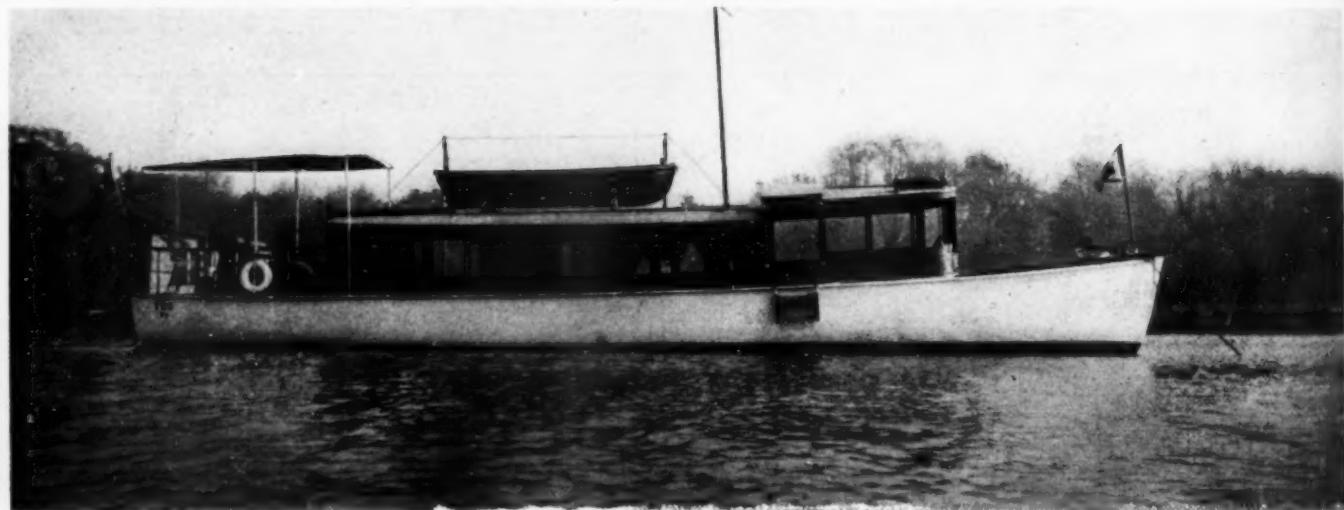
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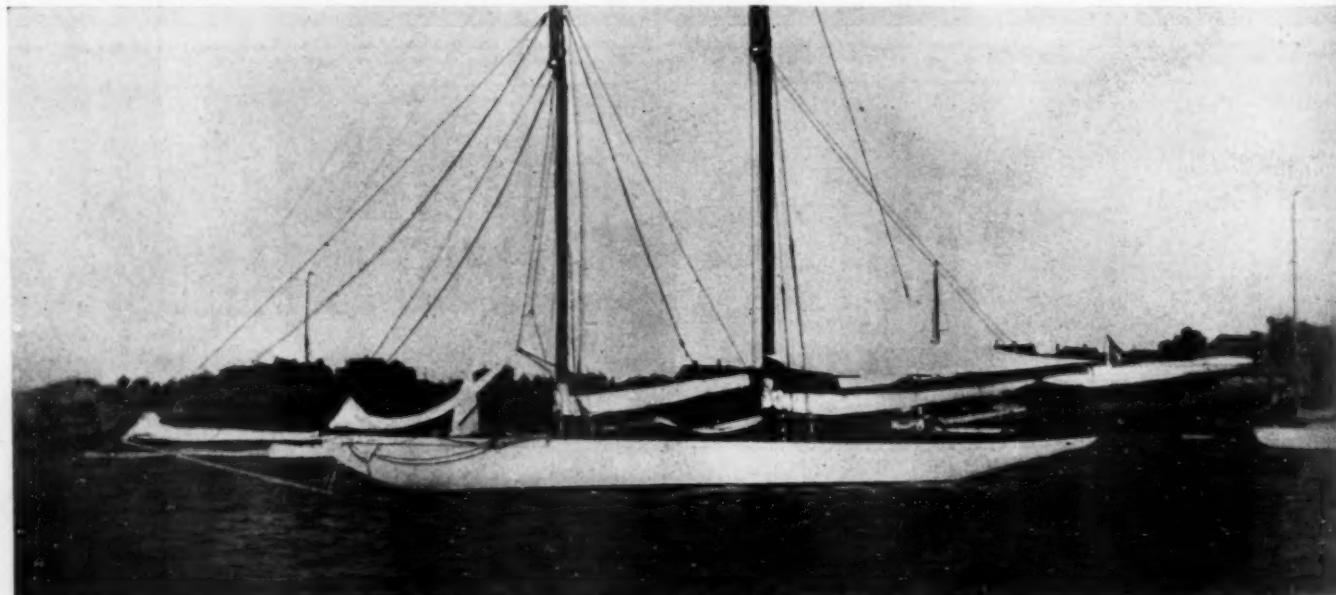
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No. 211.—For sale or charter at low prices; 104 ft. over all.
Please mention MOTOR BOATING.



No. 1296.—Price attractive; for sale or charter; 47 ft. cruiser.
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No. 701.—For charter at reasonable figure; 65 ft. auxiliary schooner.
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JULY, 1910.

MOTOR BOATING

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BRUNS KIMBALL & CO., Inc.

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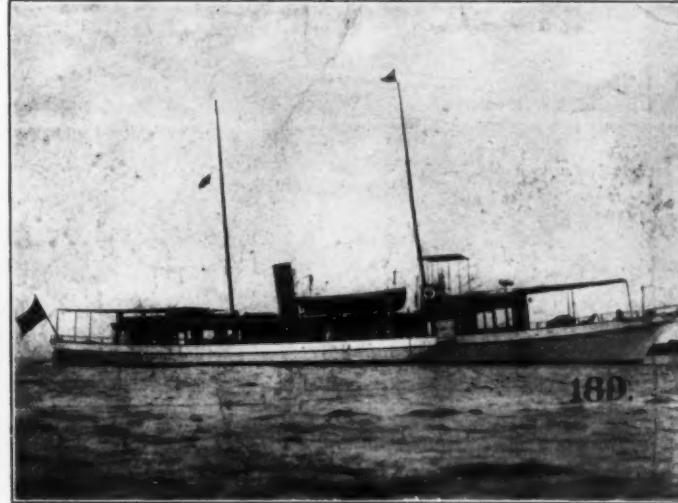
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No. 1322. 40 x 9 1/2 x 3; built 1910; 30 H. P. 20th Century engine. Price very reasonable.



No. 1193. 85 x 14 x 4; built 1902; handsomest boat afloat of her type; 125 H. P. 1907 Standard engine. Offer wanted.

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1. 99x17x4 1/2 Modern Yacht, built 1902; two 40 H. P. Daimler engines; cost \$40,000.00; price \$12,500.00.
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5. 83x11x4 1/2 Yacht; ideal for house-boat; 40 H. P. Globe engine; very good condition; \$1,800.00.
6. 70x14x3 1/2 Raised Deck, built 1907; two 25 H. P. Standards; a beautiful boat; \$10,000.00.
7. 71x14x3 1/2 Modern Raised Deck, built 1908; two 40 H. P. 20th Century engines; very class; \$12,000.00.
8. 61x13x3 1/2 Bridge Deck, built 1907; two 25 H. P. Standard engines; exceptionally fine; \$7,000.00.
9. 61x52x12x3 1/2 Hunting Cabin, built 1907; 60 H. P. Craig engine; very fast; \$4,000.00.
10. 70x59x13x5 Low Glass Cruiser, built 1900; 45 H. P. Lozier engine; \$3,000.00.
11. 65x59x14x3 1/2 Raised Deck Cruiser, built 1909; two 25 H. P. Standard engines; very fine; \$10,000.00.
12. 56x9 1/2 x 3 1/2 Raised Deck Cruiser, built 1906; 25 H. P. Standard engine; a bargain; \$4,000.00.
13. 65x12 1/2 x 3 1/2 Raised Deck Cruiser, built 1906; 100 H. P. Standard engine; offered wanted.
14. 61x58x11x3 1/2 in. Bridge Deck, built 1906; two 25 H. P. Campbell engines; this is a bargain; \$3,500.00.
15. 51x10 1/2 x 3 1/2 Hunting Cabin, built 1904; 25 H. P. Standard engine; ideal day boat; \$5,000.00.
16. 48x43x12x3 Raised Deck, built 1909; 35 H. P. Murray & Tregurtha engine; \$7,500.00.
17. 50x12 1/2 x 3 1/2 Raised Deck, all mahogany, built 1910; 30 H. P. Monarch engine; very roomy; \$5,000.00.
18. 45x13x3 1/2 Raised Deck, built 1907; 25 H. P. Automatic engine; very roomy; \$2,500.00.
19. 40x10 1/2 x 3 1/2 Raised Deck, built 1908; 18-25 H. P. Standard engine; this is a dandy; \$3,500.00.
20. 40x9x3 Hunting Cabin, with low sash, built 1907 by N. Y. Y. L. & E. Co., Morris Heights; 20 H. P. 20th Century engine; \$2,400.00.
21. 36x8x3 Hunting Cabin, built 1907; 16 H. P. White engine; very high class; \$2,500.00.
22. 42x8x30 in. Low Glass with Raised Deck forward, built 1907; 45 H. P. Essex engine; 14 miles; \$2,900.00.
23. 40x35x9x3 Hunting Cabin, similar to No. 20, built 1907; 20 H. P. 20th Century engine; \$3,200.00.
24. 36x9x3 Hunting Cabin, built 1909; 24 H. P. Lamb engine; a beautiful boat; \$2,500.00.
25. 38x8x30 in. Raised Deck, built 1909; 24 H. P. Lamb engine; a bargain; \$750.00.
26. 40x7x3 Raised Deck, day cruiser, built 1909; two 30 H. P. Gray engines; speed 16 miles; \$3,500.00.
27. 38x11x3 Hunting Cabin, Low Sash, built 1907; 14 H. P. 4-cycle engine; \$1,100.00.
28. 40 1/2 x 9x3 Low Half Sash, Sea Rover Type, built 1909; 24-30 H. P. 20th Century engine; \$4,000.00.
29. 37x8 1/2 x 3 1/2 Hunting Cabin, Low Sash, built 1909; steel hull; 25 H. P. Ferro engine; \$2,500.00.
30. 40x8x3 Hunting Cabin, built 1905; 16 ft. cockpit; one-man control; 14 H. P. 4-cycle engine; \$700.00.
31. 36x8x3 Raised Deck, built 1910; never used; 18 H. P. Monarch; a beautiful boat; \$1,800.00.
32. 32x8 1/2 x 3 1/2 in. Hunting Cabin, built 1907; 10 H. P. Buffalo engine; very high class; \$1,200.00.
33. 35x8 1/2 x 3 1/2 in. Hunting Cabin, built 1907; full headroom; 15 H. P. Buffalo engine; \$1,400.00.
34. 30x7 1/2 x 30 in. Hunting Cabin, built 1907; 12 H. P. Fay & Bowen; \$800.00.
35. 33x9x36 in. Raised Deck, built 1908; 15 H. P. Globe engine; \$1,250.00.
36. 57x11 1/2 x 4 High Class Glass Cabin; 25 H. P. Globe engine; \$3,500.00.
37. 85x70x14 1/2 x 3 ft. 10 in. High Class Glass Cabin Yacht with Bridge; 225 H. P. Standard engine; \$5,500.00.
38. 66x8x13 1/2 x 3 1/2 Glass Cabin, built 1901; 50 H. P. Standard engine; \$3,500.00.
39. 50x10x3 Glass Cabin, built 1901; 40 H. P. Continental engine; this is a beautiful boat; \$2,700.00.
40. 50x46x10 1/2 High Class Glass Cabin, built 1906; 35 H. P. Globe engine; \$3,000.00.
41. 48x42x10 1/2 x 3 Glass Cabin, built 1904; 20 H. P. Globe engine; \$2,250.00.
42. 51x10 1/2 x 3 Glass Cabin; 25 H. P. Standard engine; \$2,500.00.
43. 36x30x8x30 in. Glass Cabin, built 1906; 16 H. P. Fairbanks engine; \$1,200.00.
44. 45x10 1/2 x 3 Glass Cabin, built 1906; 25 H. P. Standard engine; exceptionally fine boat; \$2,500.00.
45. 66x46x15 1/2 x 4 Auxiliary Yawl; Lawley build; two 40 H. P. 4-cycle engines; beautiful yacht; \$5,000.00.
46. 38x32x12x3 1/2 Auxiliary Yawl, built 1904; modern bow; 10 H. P. 4-cycle engine; \$1,250.00.
47. 50x13x3 1/2 Auxiliary Yawl, built 1903; modern bow; 16 H. P. Knox; \$2,500.00.
48. 40x30x12 1/2 x 6 Auxiliary Sloop, built 1904; 18 H. P. Standard engine; \$1,500.00.
49. 65x45x15x8 Auxiliary Schooner; Lawley build; 25 H. P. engine; \$4,500.00.
50. 38 1/2 x 29x11 1/2 x 32 in. Yawl; built by Kirk, 1904; \$1,200.00.
51. 60x14x4 Ideal House Boat; 30 H. P. Buffalo engine; \$2,500.00.

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If your yacht, launch or engine is for sale, send for our listment form. We are sure to have a buyer.

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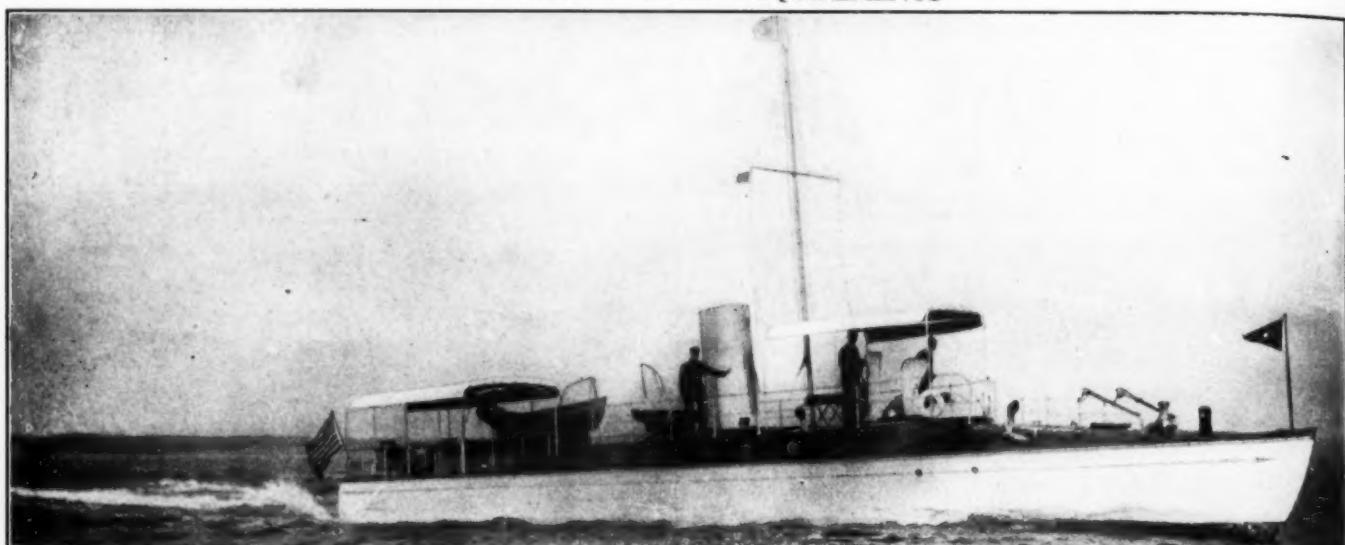
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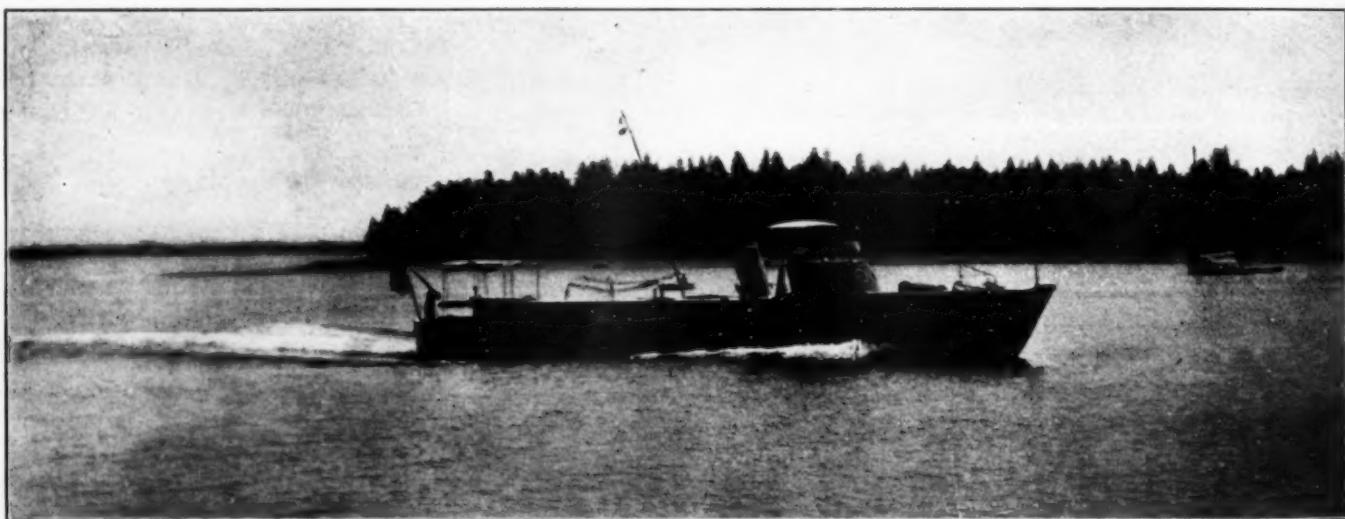
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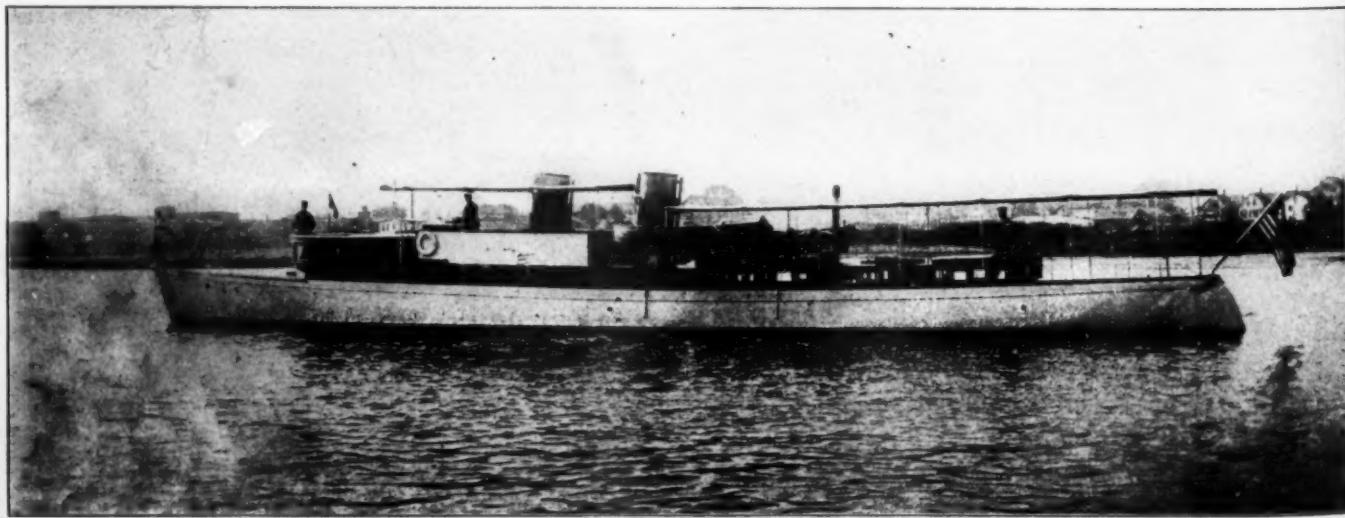
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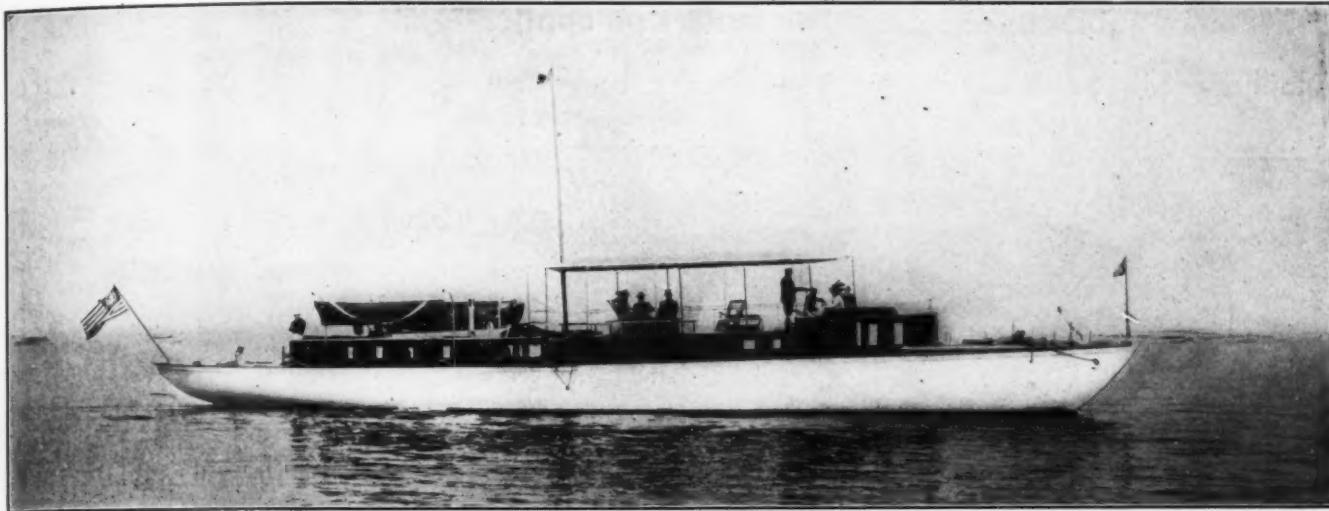
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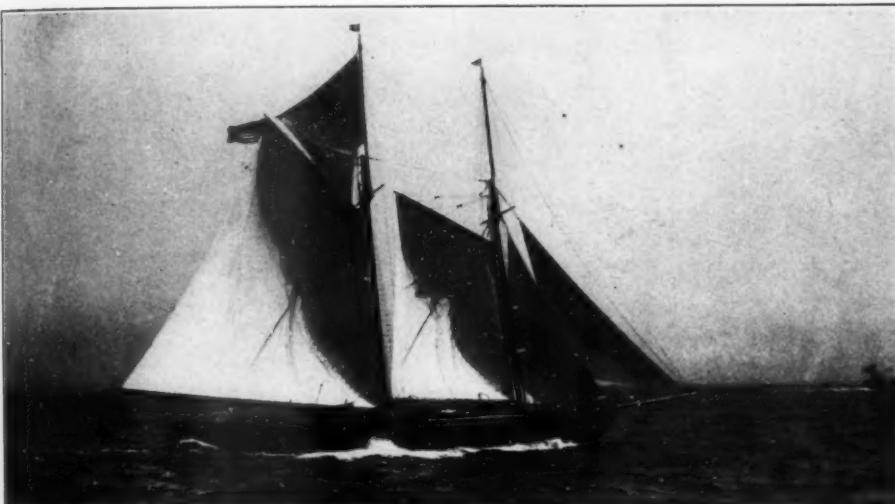
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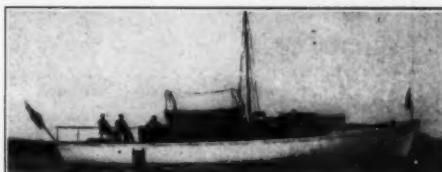
No. 1354.—Able and roomy 93 ft. twin-screw launch, recently built under my supervision by first-class builders; two 60 H.P. Craig engines. Low figure.
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No. 1499.—Bargain. Handsome, modern auxiliary schooner, recent build, offered by an estate; 110' over all, 24' beam, 6' 6" draft; 4 staterooms, saloon, breakfast room, bath, etc.; 60 horse power engine; practically in commission; no reasonable offer refused.
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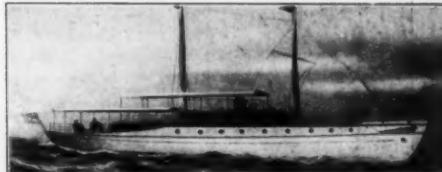
No. 1338.—Exceptionally roomy gasoline yacht, 125x20x6, three engines and propellers, speed 15 miles. Belongs to an estate.
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No. 1544.—Modern cruiser, 55 ft. x 11; built 1907; excellent motor.



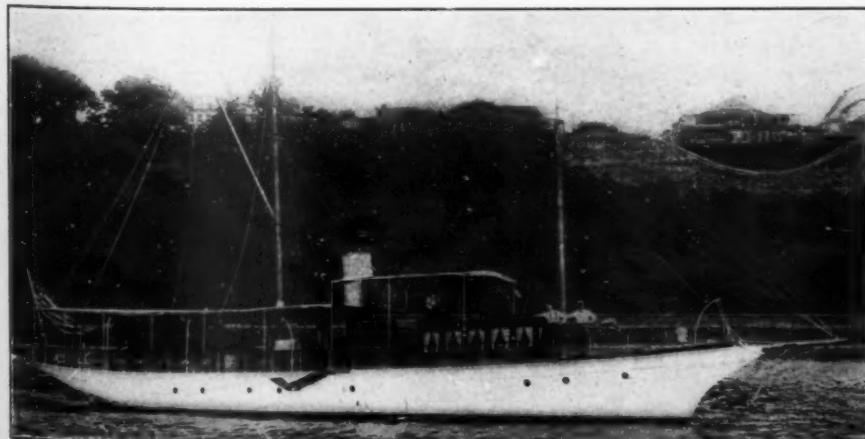
No. 920.—65 ft. cruising launch, 12.6 ft. beam; built 1906; 100 H. P. motor.



No. 1335.—Twin screw launch, 75x17; built 1908; two first-class 40 H.P. motors.



No. 441.—Commodious, twin screw house-boat, 85x23.6x4; built 1906; two 70 H.P. engines.



No. 1325. Twin screw, light draft, 90 ft. cruising power yacht, launched 1908.
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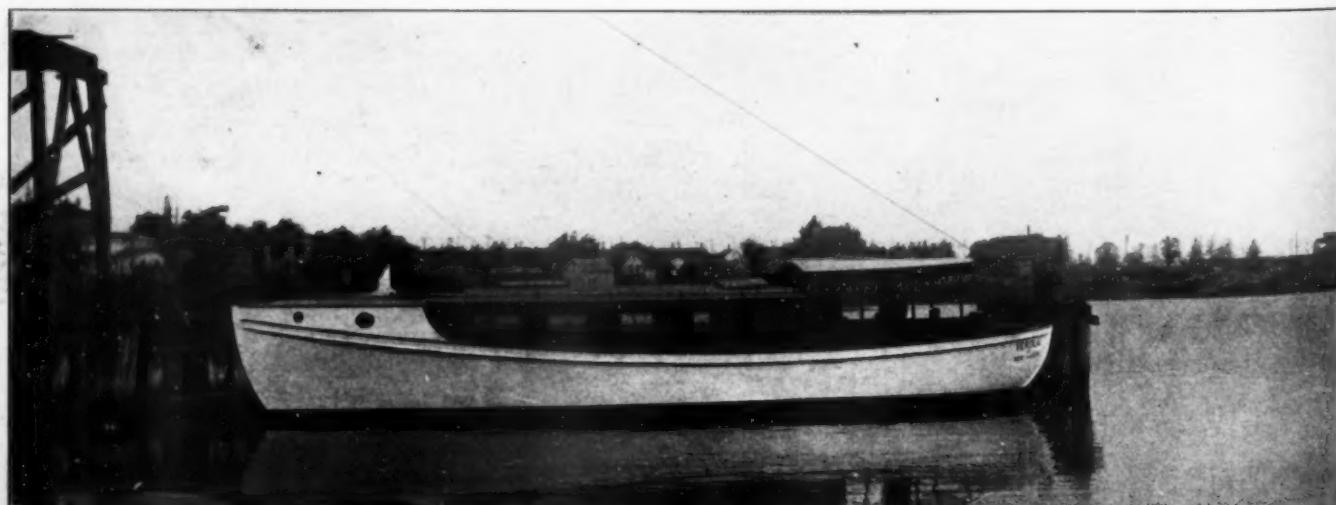
No. 24. 23 ft. x 5 ft.; 14 H. P. Mercury motor; speed 15 miles. White cedar planking; mahogany decks.
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No. 27. 21 ft. x 4 ft. 8 in; 6 H. P. Mercury; speed 11 miles.
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No. 37. Trunk cabin cruiser Playfellow, 36 ft. x 8 ft.; 30 H. P. 4-cycle motor; fully equipped; perfect condition; all mahogany finish. GREAT BARGAIN.
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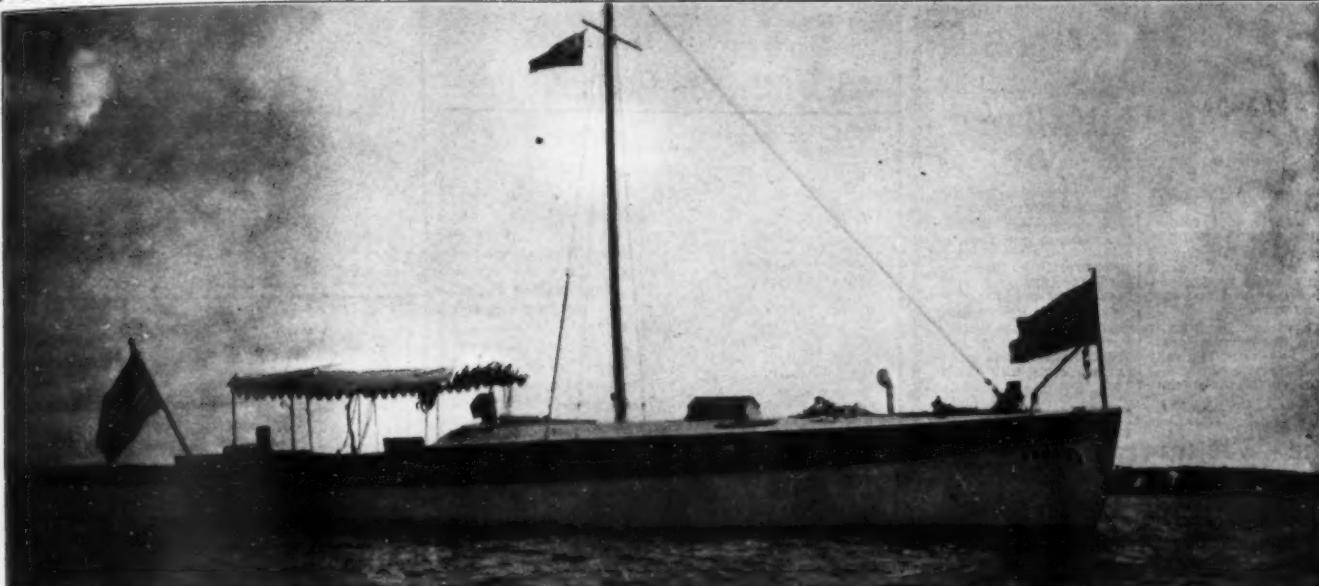
No. 39. "Vergia." 40-ft. cruiser, 10 ft. beam, for sale; owner cannot use this summer. Fully equipped; toilet, electric lights, Apple dynamo, storage battery, 25 H. P., 4-cylinder, 4-cycle motor. Speed ten miles. Can be seen at our works. Must be seen to be appreciated. Interior panelled oak. Sleeps 6.
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Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MOTOR BOATING.



FOR SALE—Cruising Power Yacht "Ursa," 42 feet 6 inches over all, 9 feet beam, 3 feet 6 inches draft, 18 H. P. Standard motor, speed 11 miles; carries a cedar tender on davits; two gasoline tanks with a total capacity of 210 gallons, giving a cruising radius of 600 miles; 100-gallon fresh water tank; two anchors with 300 feet of chain each; compass with Negus compensating binnacle; lighted by electricity throughout, including a 1200-candlepower searchlight. The boat and engine are just one year old and in perfect condition, built with natural crook cedar timber, the only kind that will last in southern waters. Her equipment is complete in every detail; sleeps five, and with a slight change could be arranged to sleep seven. See the January and February, 1910, numbers of "Yachting" for full description of her in article, "A Cruise to the Bahamas." This boat is on the market because owner wishes to build a larger boat, and can be had at a bargain; now in commission at Bradenton, Fla. Address owner, Dr. H. Baer, Bradenton, Fla.

FOR SALE—A 25-foot cabin keel sail yacht, everything complete, for \$250. Inquire Ward Corbitt, Charlotte, N. Y.

BOAT SUPPLIES—Lamps, whistles, horns, electric lights, automatic drainers, Perfex igniters; a full assortment; largest stock in Northwest. Shadegg Engine Co., 315-17-19 Third Street South, Minneapolis, Minn.

FOR SALE—Sloop rig yacht, 27x8x3.6 ft.; carries 475 feet canvas; hollow spars, silk sails; complete inventory. Particulars of C. A. Tovell, Lockport, N. Y.

FOR SALE—43-foot new 18 H. P. Fairbanks-Morse engine, with complete equipment; engine has never been run; owner unable to use boat on account of position; price \$800.00. D. M. Leadbetter, Houghton, Mich.

FOR SALE—Immediate delivery, 50-ft. raised deck cruiser; fully equipped Truscott hull; 6-cylinder Speedway motor; low price to sell quick. Truscott Boat Mfg. Co., St. Joseph, Mich.

FOR SALE—40x8-ft. Truscott glass cabined cruiser, 15 H. P. two-cylinder engine; fully equipped; an exceptional bargain, and can be delivered at once. Truscott Boat Mfg. Co., St. Joseph, Mich.

FOR SALE—38-ft. cruiser; cabin amidship; cockpit fore and aft covered with extension of cabin deck; mahogany finish; three-cylinder Wolverine engine; no reasonable offer refused. Truscott Boat Mfg. Co., St. Joseph, Mich.

FOR SALE—At a bargain, fresh water gasoline tug, 30x10 ft.; two-cylinder, heavy duty Truscott; practically new; can be used for fishing, towing or carrying passengers. Truscott Boat Mfg. Co., St. Joseph, Mich.

FOR SALE—Immediate delivery, 40-ft. glass cabin cruiser on Lake George; six-cylinder Truscott motor; very complete equipment; finest finish; low price for quick sale; outfit has seen but little service. Truscott Boat Manufacturing Co., St. Joseph, Mich.

CANVAS OILED SUITS, YACHT FLAGS, TENTS. R. A. Humphry's Sons, 1023 Callowhill St., Philadelphia, Pa.

LAUNCH (new), 25 ft., standing top, eight horse-power engine, full equipment, complete, \$500. Inquire A. J. Simpson, 223 Clinton Ave., Newark, N. J.

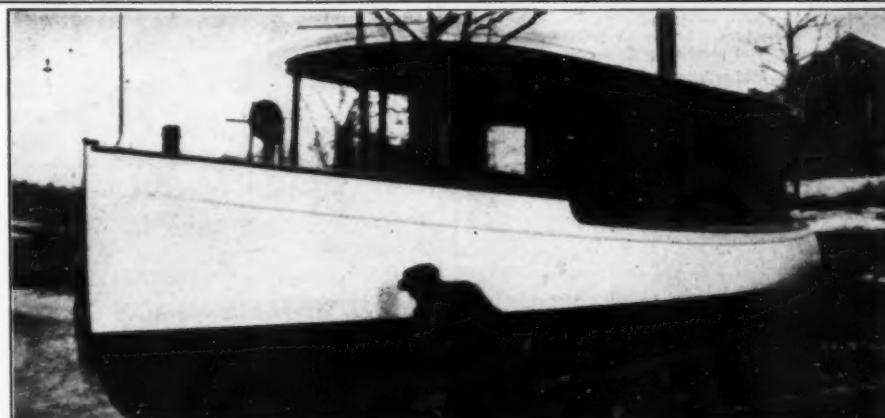
ONE OF EACH—26, 30 and 36-ft. launches, complete, in good condition at bargains. Also one two-cylinder, 7 H. P., and one four-cylinder, 12 H. P. White marine gasoline engines. Enterprise Machine Co., Minneapolis, Minn.

LAUNCH FOR SALE.—High-speed open launch, 37x6 feet; absolutely new; 4-cylinder, 4-cycle, 20-25 horse-power Buffalo engine; 15 miles per hour; all fully equipped and in first class condition; complete inventory. Will sell entire outfit at cost of engine. J. F. Waggoner, Memphis, Tenn.

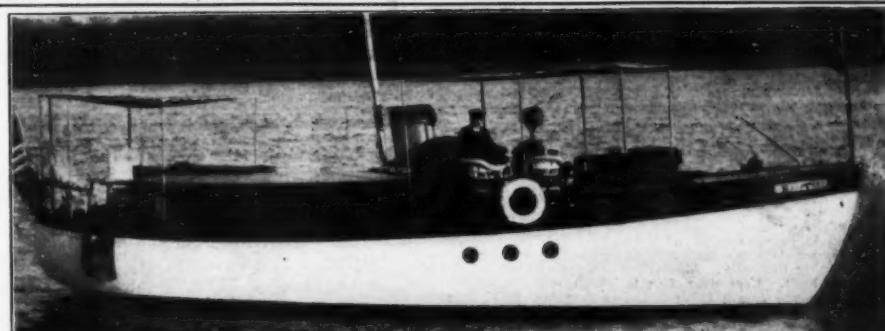
MOTOR BOAT, 23 ft. x 4½ ft., semi-speed, strip boat equipped with 7 H. P. double cylinder Ferro, magnet, whistle, pump, bell, fog-horn, life preservers, electric hand searchlight, chairs, Harlow canopy top; built in 1908, and in first class condition. Price \$400.00. Lock Box B, Vergennes, Vt.

NEW 20 H. P., 4-cylinder, four-cycle Eagle and clutch; full equipment; never uncrated; price, \$475.00. A. Stainforth, Winthrop, Mass.

FOR SALE—Motor Boat, 23 feet long, five (5) feet beam, oak decks, 2-cylinder, 7 H. P. motor, speed 10 miles per hour, a bargain for quick cash sale. Address, E. G. Heaton, Baldwinsville, N. Y.



For immediate delivery, 40-foot Pullman cruiser, fully furnished and equipped; automobile control; seaworthy, comfortable, handsome and fair speed. Price moderate. A boat to be appreciated by those of refinement. Bath Marine Construction Co., Naval Architects & Yacht Builders, Bath, Me.



FOR SALE—A cabin cruiser, 42 feet over all, 9 feet 10 inches beam, 3 feet 4 inches draft, equipped with 32 H. P. Jaeger four-cylinder, four-cycle engine; speed eleven miles per hour; mahogany finished cabin; 6 feet 2 inches headroom; sleeps eight; good reason for selling. Full particulars, address G. F. Seibel, Taunton, Mass.

FOR SALE—18-ft. two-cylinder launch; first class condition; a bargain. Can be seen at Hammondsport, N. Y. Telephone or write G. H. Reynolds, Agent, Bath, New York.

FOR SALE—26-ft., half-cabin cruising power boat; built by Vaughn Bros.; in commission two months; completely equipped in every respect except engine; a "Pullman" on water; will sell at bargain price; owner unable to use outfit this season. Lock Box 41, Philadelphia, Pa.

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NEW BOAT, 24x5x10; 10 H. P. Regal engine; 14-foot batteau, \$20. L. P. Wallace, Palmyra, N. J.

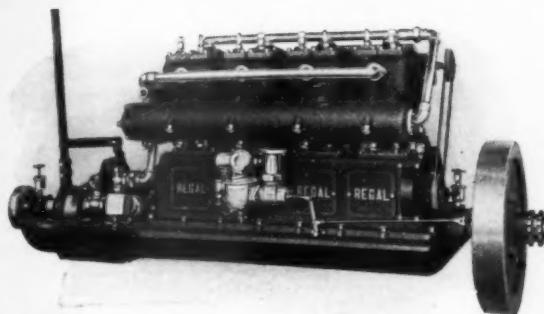
FOR SALE—New 30-ft. Launch and 28-ft. Auxiliary yawl. Miller's Ship Yard, Patchogue, New York.

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run so steadily without the usual troubles of gasoline motors that they *may* seem monotonous to some people. But it's one of the strong points of the Regal, which embodies the highest type of mechanical skill, reliability and economy in operation. Fuel consumption about 1/10 gal. per horse-power hour. Built for heavy duty or high speed; 1 to 4 cylinders; 3 to 45 H. P. Satisfaction guaranteed.

You will be interested in Catalog No. 35. It explains why Regal Engines are so dependable. Write today.

Regal Gasoline Engine Co.,

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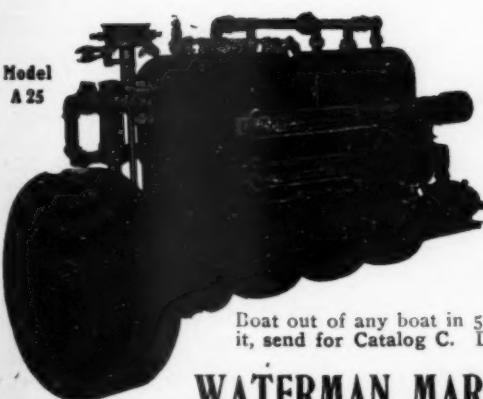
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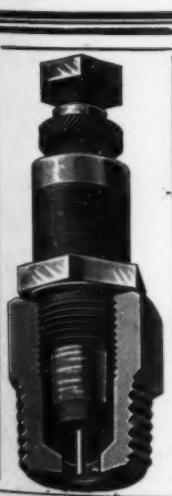
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The only Outboard Motor that has proven absolutely successful. Five years' satisfactory record. Over 4000 in use all over the civilized world. With it you can make a Motor Boat out of any boat in 5 minutes. A genuine 2 H. P. Marine Motor. Know more about it, send for Catalog C. Don't guess, nor experiment, buy a "Waterman."



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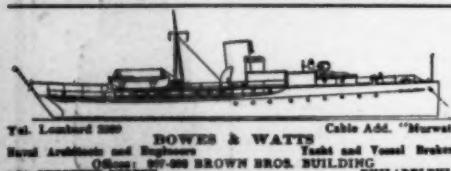
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Motor Boat Meet at Peoria.

(Continued from page 14)

water when in motion and is a sensational
performer.

In the same 20-foot class will start the M.
V., now owned by W. E. Hughey, of Bellevue,
Iowa. Last season this little boat had the
undisputed western championship with a speed
of 19.79 miles per hour. Her horsepower has
been trebled for this season's work. Against
her, besides the Pronto II, in the 20-foot class
will start M. V. II, owned by H. S. Senig, of
St. Louis. The power of this boat is kept a
secret, though it will start in all four classes.

These three little flyers must meet a new
design by Pruitt and Stillman, calculated to
carry 120 h.p. in her 20-foot length, and also
a new model by Wm. Carrier, of Peoria, with
a tunnel stern, equipped with 60 h.p.

Four notable thirty-two-footers have en-
tered for that class and also for the free-for-
all. One is supplied by the Syracuse Engine
Co., of Syracuse, N. Y., and carries a six-
cylinder power plant, as yet untried. Another
is un-named, owned by W. C. Blood, of Terre
Cia, Fla., with a stated horsepower of 120.
A third is the Reagan, owned by R. C. Reagan,
of Rock Island, Ill., 120 h.p., untried.

The 26-foot class already has the Vim,
owned by Meyers Bros., of Peoria, 50 h.p.;
the Helen C., of Peoria, owned by Wm. Rees
and Sons, 36 h.p.; the Marie L., L. Lillian, of
Peoria, 36 h.p.; the Diana, of Peoria, W. H.
Johnson, 48 h.p.; and the Helen II, Wm. Car-
rier, 70 h.p. In this class will also start all
of the 20-footers.

The rules under which these races will be
run are the simple ones of the M. V. P. B. A.
and Western Association. They require only a
conformity to the length over all measure-
ments of the four classes, regardless of beam,
weight and power.

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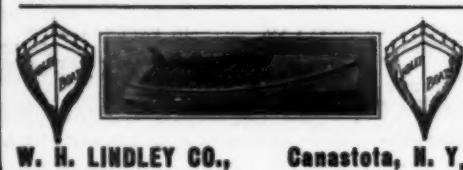
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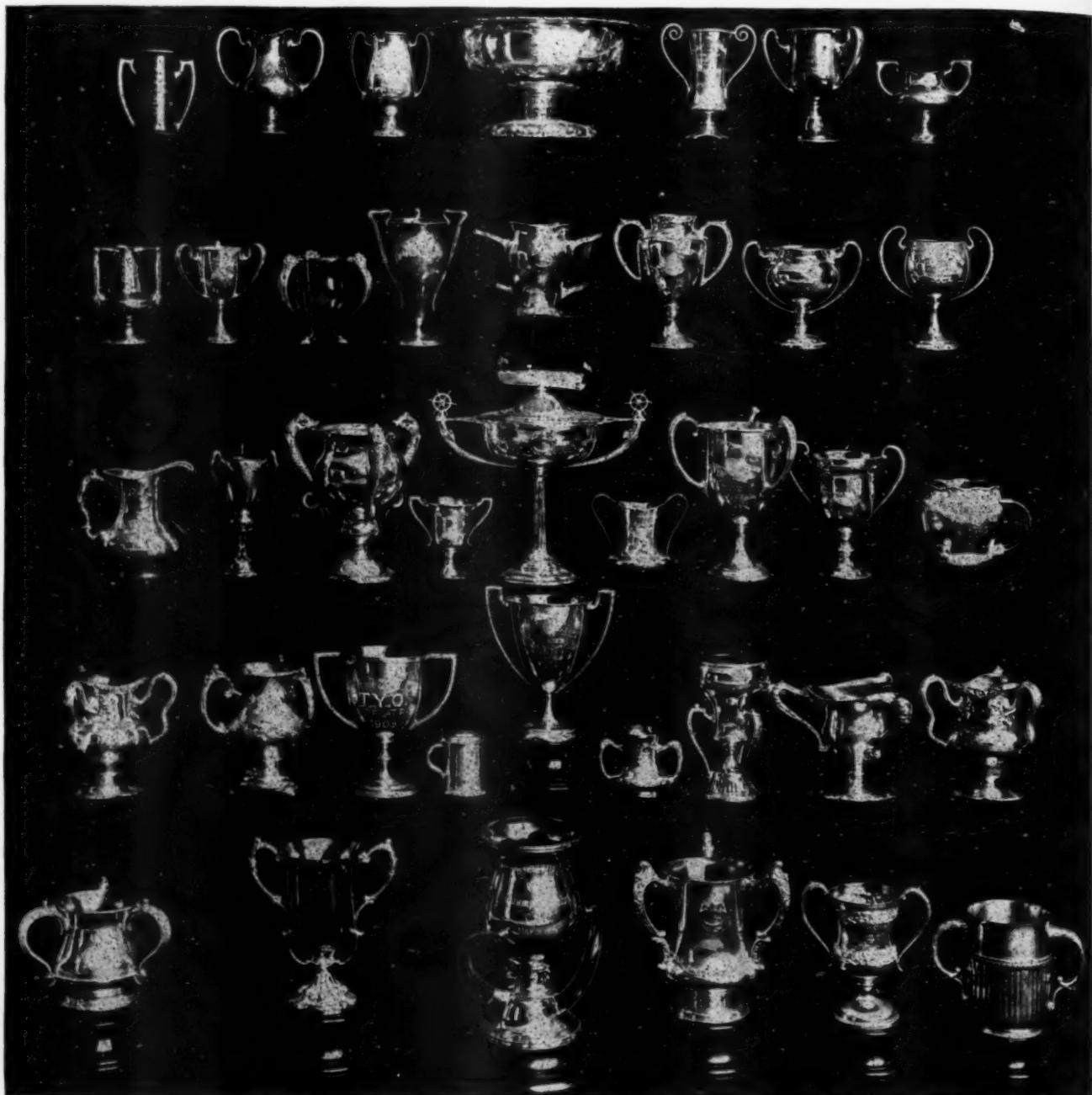
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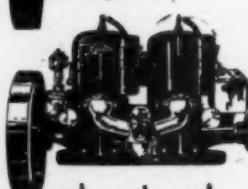




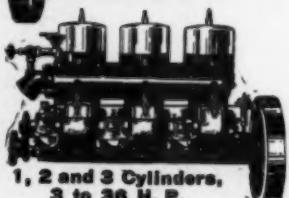
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The Propeller

The Frontier Propeller is true pitch $\frac{1}{4}$ the length of blade, and differential at the hub, overcoming all agitation at that point.

It gives a shearing cut from hub to periphery, allowing the wheel to work full length of blade.

The water is discharged in a tapered volume aft. Thus all the efficiency, less a very small percentage of slip, is afforded.



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Name:	How many cylinders?	Size of shaft:
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Length—over all:	Bore of engine:	Taper or straight bore:
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Beam:	Make of engine:	If straight, do you want set screw:
Draft:	Engine speed with present propeller R.P.M.	Size of key seat:
Is boat heavy or light?	Size wheel now used: Dia. Pitch:	How large a wheel can you swing allowing about one inch for clearance:
Shape of bow, full or sharp:	Make of wheel:	Right or left hand:
Shape of stern:	Number of blades:	Speed of boat with present wheel:
Indicated H. P. of engine:		
At what speed do you wish engine to run:—R.P.M.		

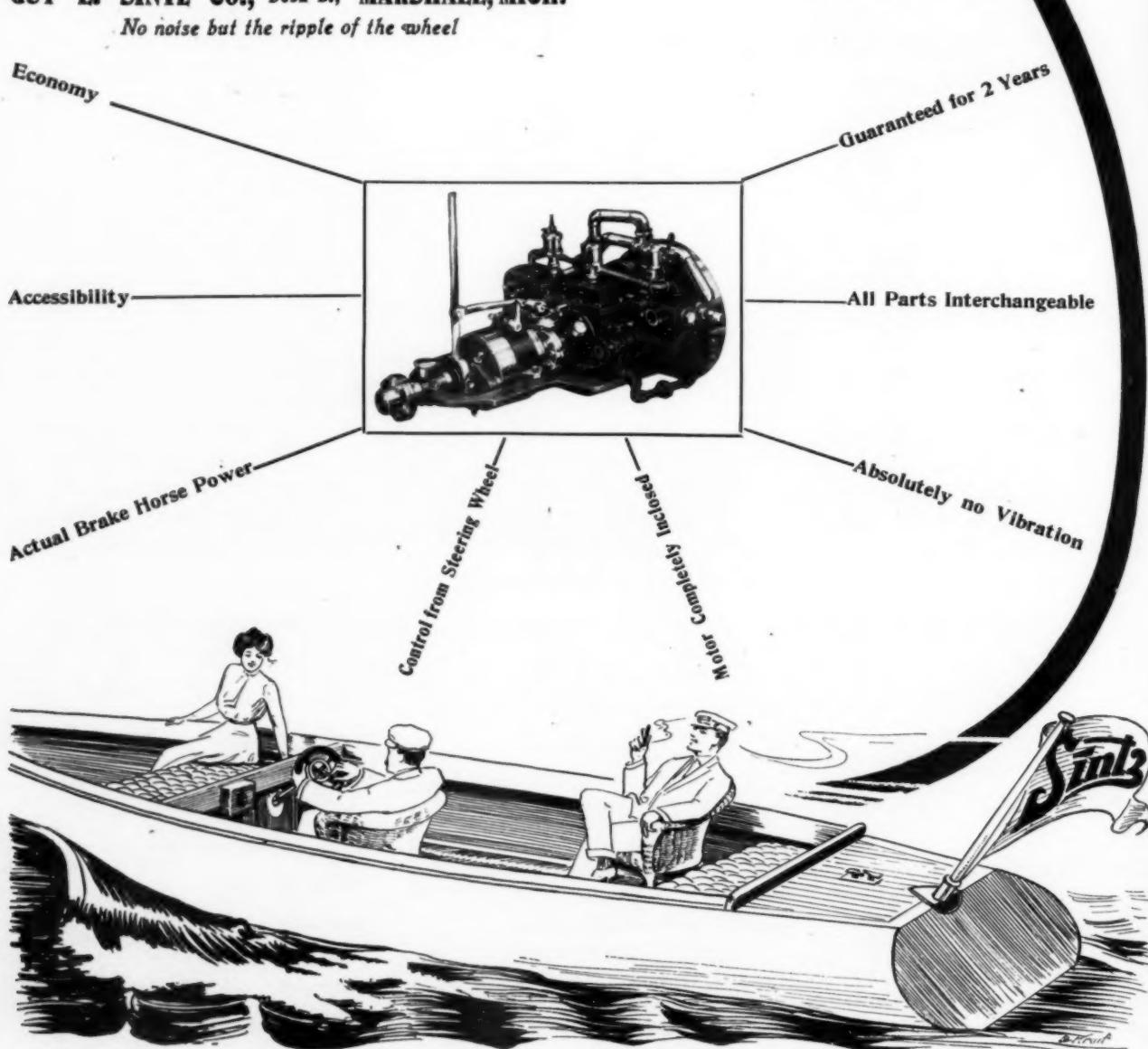
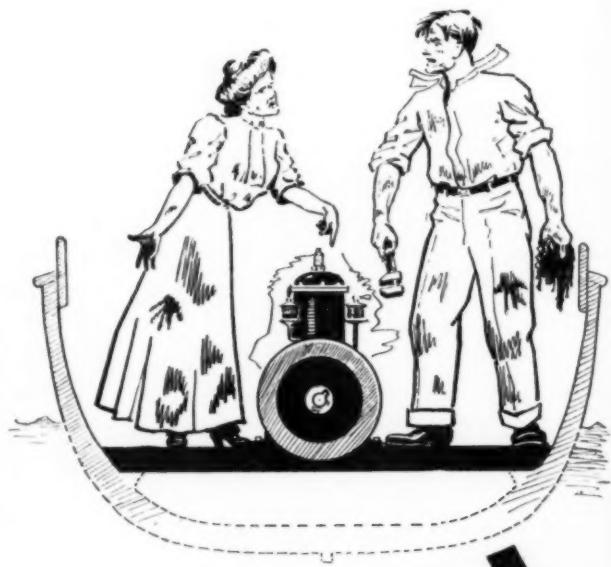
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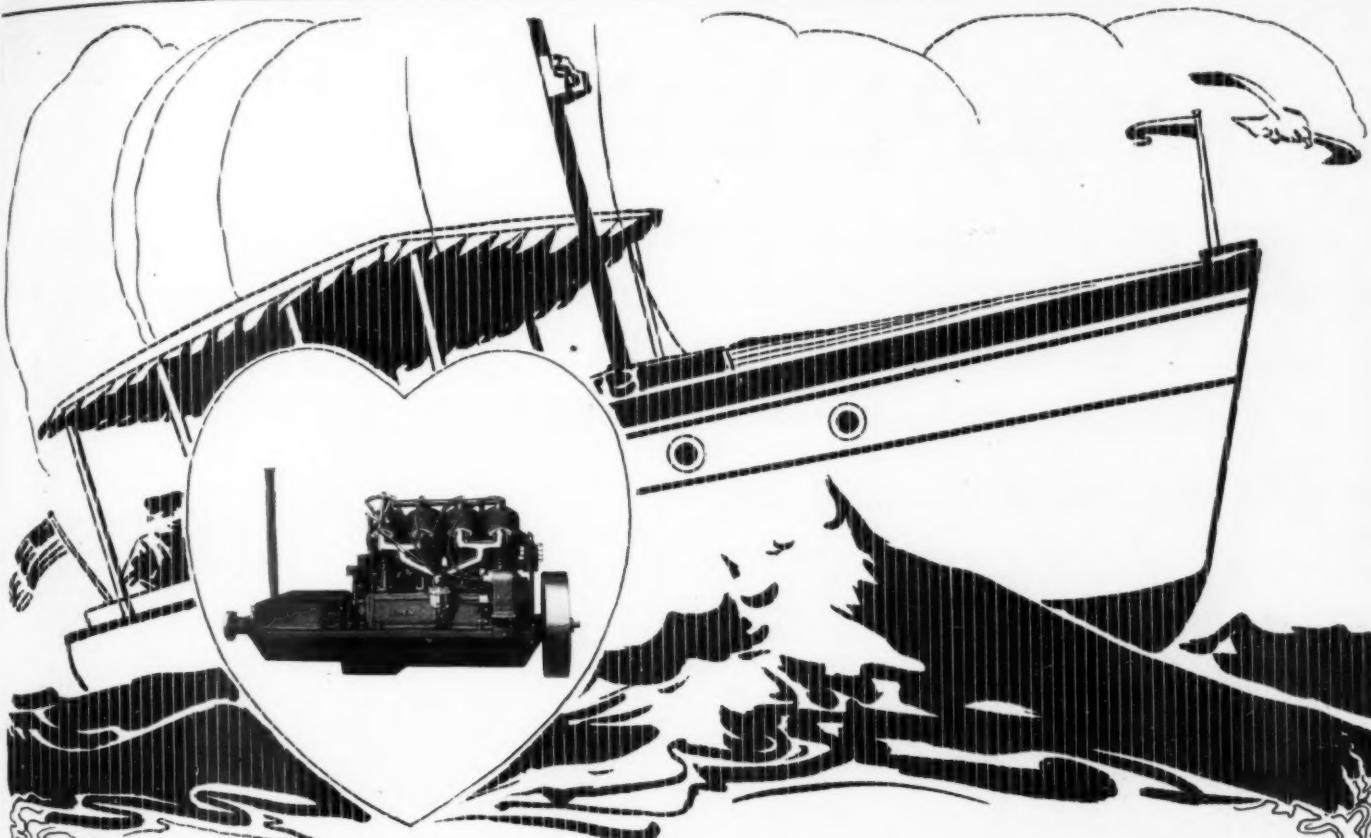
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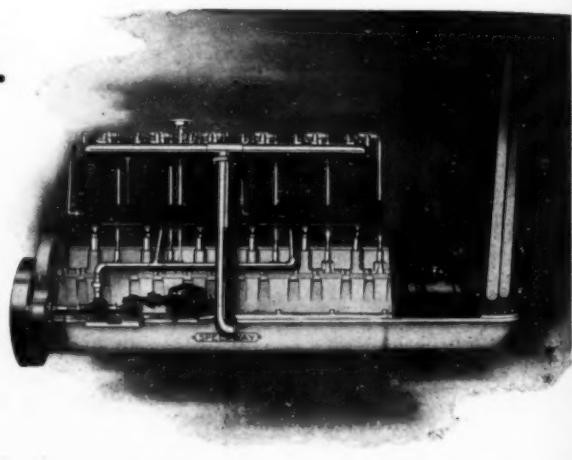
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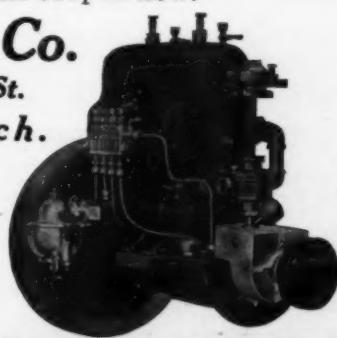
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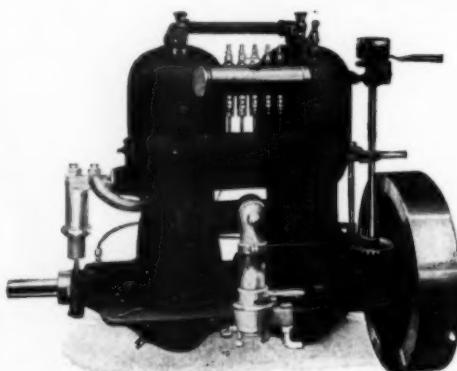
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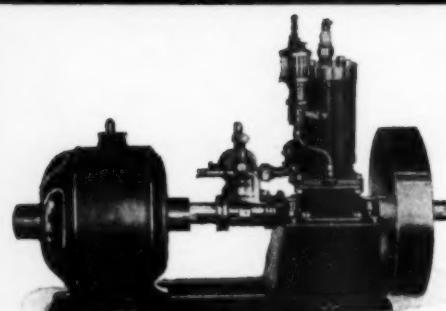
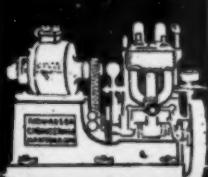


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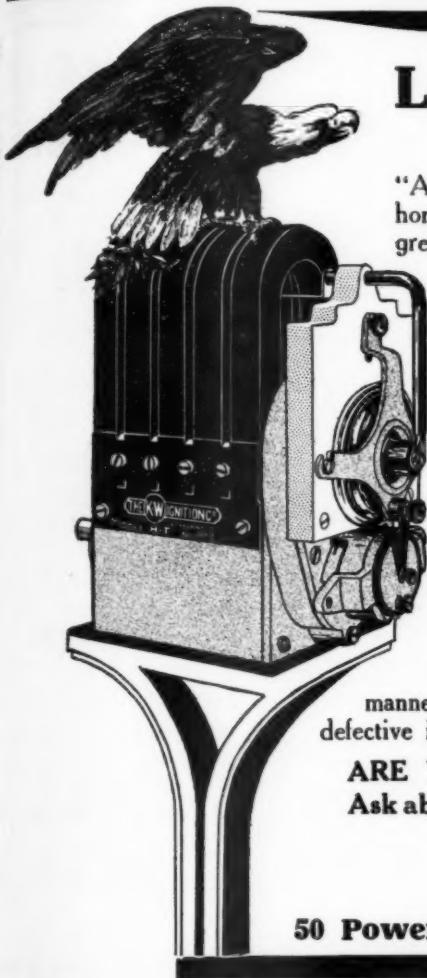
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Let The Eagle Scream

Let Old Glory wave "O'er The Land of the Free" "And the Home of the Brave" and every true American do homage to the day which marks the Independence of our great and glorious country.

Make a resolve this day to declare YOUR independence and to no longer have your pleasure and that of your friends marred by poor ignition.

You can't expect to have the best engines ever made do good work on poor ignition and you can't expect anything else but trouble if you insist upon using dry cells—storage battery or toy "sparkers."

THE K-W MAGNETO

carries with it a certificate—in writing—guaranteeing it to start any engine on a quarter turn **without batteries**—to run it at **all speeds** and under **all weather conditions** evenly—smoothly—and **without missing**. To produce **more power** than any other system or any other magneto and is sold on a 30 day trial with a distinct understanding that if not satisfactory in every way, shape and manner **MONEY WILL BE PROMPTLY REFUNDED**. Any part proving defective in material or workmanship will be replaced **FREE** within two years.

ARE YOU READY TO BE SHOWN? IF YOU ARE, write us to-day.
Ask about the K-W Spark Coil Guaranteed FOREVER. A Post Card will do.



50 Power Avenue,

Cleveland, Ohio.



MULLINS STEEL BOATS

CAN'T
SINK

SAFE, FAST AND DURABLE

Mullins Boats are built of smooth steel, puncture-proof plates, with air chambers like a life boat. They glide through the water easily. Cannot sink, crack, warp, open at the seams, dry out or wear out. Require no calking. Above illustration shows our 26-foot, 40 h. p. launch, with auto seats and control, in Government service. Speed, 17 to 19 miles. Price, with cushions, \$1250.

Greatest Values Ever Offered

Six other models, 16 to 24 feet, 3 to 20 h. p. All have 2-cycle engines that can't backfire, silent underwater exhaust, one-man control, inside stuffing box, outside gasoline intake, improved carburetor and reversing device, and many other exclusive features.



Complete variety
of Row Boats and
Duck Boats

\$22.00 to \$39.00

**CATALOG
FREE!**

Big 1910 Catalog describes all launches, also full line of Row Boats, Hunting and Fishing Boats, Marine Engines and Accessories. Write for it.

THE W. H. MULLINS CO., 182 Franklin St., Salem, Ohio
LARGEST BOAT BUILDERS IN THE WORLD

"THE YANKEE" SILENT MUFFLER AND POWER WHISTLE OUTFITS

YANKEE MUFFLER
PAT. AUG. 31, 1903.

YANKEE WHISTLE OUTFIT
Complete as shown in cut Nos. 4, 5, 6, 7—\$20.00 to \$30.00

The Yankee Whistle Outfit may be attached to any gasoline engine of any make or description in a few minutes.

It takes no power from the engine.

It has the only automatic CHECK valve that does not operate on compression.

AN EXPLOSION MUST TAKE PLACE IN THE CYLINDER OR VALVE REMAINS CLOSED.

Absolutely safe. No live gases can enter tank.

Easily adjusted and requires no further attention.

Polished four-tone chime whistle, galvanized air tank—equalizes engine pressure—valve closes automatically. Also provided with safety valve.

Fills every requirement of the law. Satisfaction guaranteed.

Buy only by The Yankee Co., Box "MB," Utica, N. Y.
Write for catalogue

PASS GOVERNMENT INSPECTION

YANKEE MUFFLER
IN VACUUM CHAMBER SILENCER OUT

YANKEE WHISTLE OUTFIT
QUARTET CHIME WHISTLE

YANKEE MUFFLER
Both for sale in New York by Durkee & Co., 3 South St.; E. J. Willis Co., 8 Park Place; Chas. E. Miller, 97 Reade St.; P. G. Chapman & Co., 90 West St.; Philadelphia, Pa.; 100 W. 14th St.; Bidwell, Chicago; Bullock-Waite Co., 111 E. Lake St.; San Francisco; California Gas Engine & Supply Co.; Canada: Canadian-Fairbanks, Montreal and Toronto.

A black and white line drawing of a 70-foot cruiser. The boat has a long hull with a prominent bow, a deckhouse in the middle, and a stern deck. It features a mast with a single flag, a small deck crane, and a small cabin on the stern. The text '70 FOOT CRUISER' is printed below the illustration.

Demonstrator Agents Wanted in Every Community

16-ft. Steel Launch \$96

Complete with Engine, Keels in Run

18-20-23-27 foot Launches at proportionate prices. All launches tested and fitted with Detroit two cycle reversible engines with speed controlling lever—simplest engine made—starts without cranking—has only 8 moving parts—anyone can run it. Steel Row boats \$80.00. All boats fitted with air tight compartments. **DETROIT STEEL ROW CO., 1515 St. Paul Street, Detroit, Mich.** Send for free catalog. Send us your name and address and we will send you the names of the dealers for the nearest city (or nearest state), local names, concentrated riveted steel boats filled the day they are received. Write for Free Illustrated Catalog and testimonials of 10,000 satisfied users.

Michigan Steel Boat Co., 1220 Jefferson Ave., Detroit, Mich., U. S. A.

The advertisement features a large, detailed black and white photograph of a mechanical reverse gear assembly. The assembly consists of a vertical shaft with a handle at the top, a horizontal connecting rod, and a large, complex gear housing at the bottom. The background is plain white, making the dark mechanical parts stand out. Above the image, the text "TRADE MARK" is written in a small, sans-serif font. Below the image, the words "Duct Manufacturers" are printed in a small, bold, sans-serif font. The overall layout is clean and professional, designed to showcase the product's complexity and craftsmanship.

KOVEN GASOLINE TANKS

Marine Water Chests
LAVATORIES, TANKS, Etc.
J. H. CURTISS CO.
2 South Street NEW YORK
Telephone 4840 Broad

An advertisement for William E. Thomas & Co. The top half features the company name in a bold, serif font. Below it is a line drawing of a boat with a spray hood installed. The word 'SPRAY' is written vertically on the left side of the boat, and 'HOODS' is written vertically on the right side. The bottom half contains descriptive text about the spray hoods.

SAMSON TILLER ROPE
Solid braided cotton with center of bronze wire. Strong and durable, and will not stretch nor rust. Send for sample.

SAMSON CORDAGE WORKS, Boston, Mass.

COOLEY SPRAY HOODS
To fit any size Boat.
Write for catalogue

Cooley Manufacturing Company
27 FEDERAL STREET BOSTON, MASS.

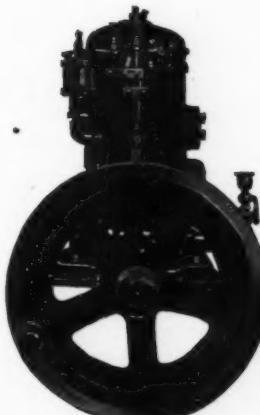
THE "KENNEBEC"

Sturdy Enough for the Fisherman

The fisherman, who goes out in any and all kinds of weather, day and night,—winter and summer,—puts his engine to the severest test possible.

His very livelihood depends upon the reliability of his motor, and he **MUST** have an engine upon which he can depend at all times and seasons, and under all conditions.

Do you want a better recommendation than this for the engine for your Motor Boat?



Handsome Enough for the Finest Pleasure Boat

Remember, Mr. Boat-Owner, that while you do want an engine upon which you can depend, and which will stand up under all possible hard knocks, you do not want a rough looking, uncouth mass of metal to put in that handsome new boat of yours, and just because the KENNEBEC stands hard usage and exacting conditions, do not fancy it is a "rough jewel." It runs more smoothly and is the most completely equipped motor that you have ever seen, splendidly finished and

in any size exceeds its rated horse-power from thirty to forty per cent.

Ask the Fishermen what they think of the "KENNEBEC" ENGINE

Write for Catalog M

Manufactured by **TORREY ROLLER BUSHING WORKS, BATH, MAINE**

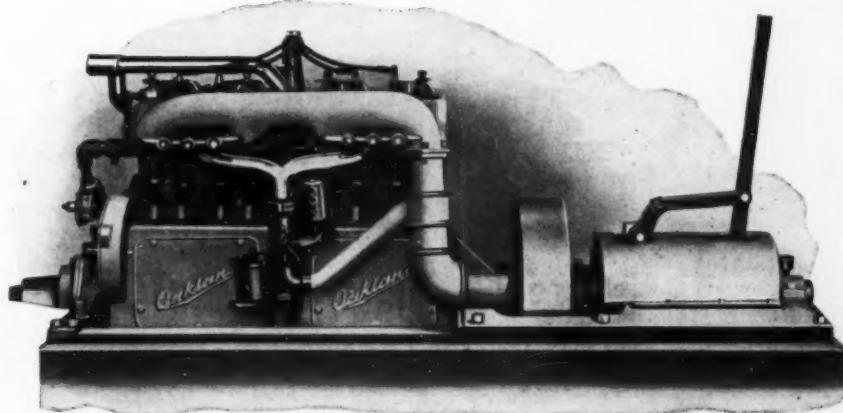
NEW YORK AGENTS :

THOS. I. SIMPSON & CO., 68 South St.

Oakland
20-32

The Right Marine Engine

Oakland
20-32



CONVENIENT

COMPACT

CLASSY

THE PRICE? Get interested and ask us.

THE WILPEN COMPANY

102 to 110 Bates St.

Detroit, Mich.

New York agency, Room 31, 126 Liberty St.
Pacific Coast agency, 204 N. Los Angeles St., Los Angeles, Cal.

Oakland
20-32

Oakland
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Universal Specialties

12-in. Pol. Brass Steering Wheels.....	\$1.50
16-in. Pol. Brass Steering Wheels.....	2.30
12-in. Galv. Wood Handles.....	1.00
16-in. Galv. Wood Handles.....	1.75
20-in. Galv. Wood Handles.....	3.10
6-in. Pol. Brass 20th Century Deck Searchlights.....	6.10
7-in. Pol. Brass 20th Century Deck Searchlights.....	7.50
Pol. Brass Bilge Pump.....	1.60
1-in. Schebler Carburetor.....	6.50
Guaranteed Jump Spark Coils.....	3.40
Pump Whistle Outfit.....	3.45
2 x 3 Canvas Yacht Fenders.....	.30
Ammeters.....	1.50
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Power Boat Steerer.....	4.65
1-in. Pol. Brass Deck Plate.....	.20
Oil Guns.....	.25
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UNIVERSAL
Auto and Motor Boat Supply Company
113 CHAMBERS STREET, NEW YORK

Manufacturers Jobbers Exporters Importers

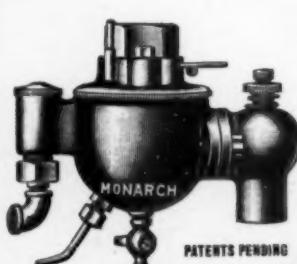
OUR 1910 MARINE CATALOG

is now ready for the asking. Larger, more complete and more interesting than ever before. It contains the latest ideas in Up-to-date Marine Equipment. Let us have your application as soon as possible.

New York Representatives for
DAYTON ELECTRIC CO. BANTAM ANTI-FRICTION CO.
WONDER GASOLINE ENGINES
PYKE AUTOMATIC BOAT DRAINER

MONARCH CARBURETOR

For 1910



MODEL G. VERTICAL
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buretors are of correct design, and add to the efficiency of motors using them. They are fitted with a very practical and ingenious DISC THROTTLE, interposed between the check and the carburetor.

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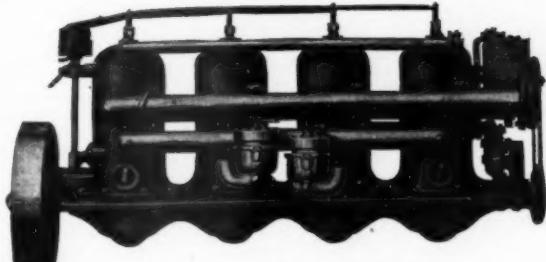
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Without an Equal in all the world



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Bore and stroke—4 x 4 inches Bore and stroke—5 x 5 inches
 2 cylinder—12-15 H. P. 3 cylinder—35-40 H. P.
 3 cylinder—19-23 H. P. 4 cylinder—40-55 H. P.
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The most perfect two cycle motor made

Why?

Simply because, in the engine, we have reached the highest pinnacle of perfection yet attained in gas engine construction.

We built upon the two cycle principle—the ideal.

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But we have gone a long step beyond any ordinary two cycle engine.

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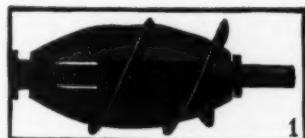
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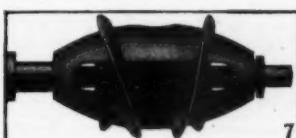
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The Roper Safety Propeller is the ONLY safety guaranteeing propeller or speed control offered to the motor boatman. A Reverse Gear is in no sense a speed controlling propeller, and no other speed controlling propeller gives in any degree the range and flexibility of control obtained through the use of the Roper Safety Propeller. It is a speed controlling and reversing propeller combined. Its use renders the speed control of the boat driven by an internal combustion motor as flexible as the control of the steam driven boat.



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Neutral.

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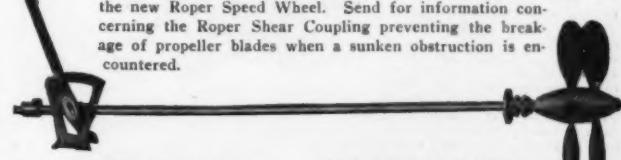
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Full Speed Astern.

Perfect Speed Control, Alongside, Forward or Back of the Motor is obtained through the use of the Roper Safety Propeller Bow Control. The Bow Control equipment is adaptable to all classes of motor boats and acts exactly similar to the regular equipment.

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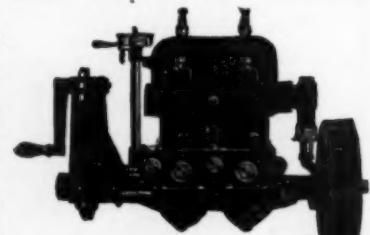


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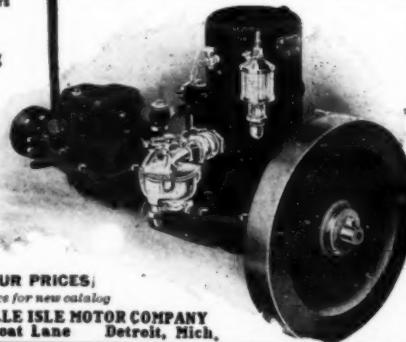
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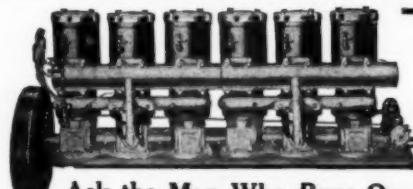
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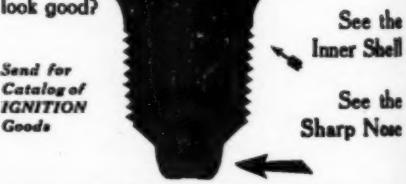


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1½ HP., 2½ HP., 3½ HP., 6½ HP.

Single Cylinder Motors

7-8 and 12-14 HP.

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HERE IS AN OFFER WORTH CONSIDERING:

WE WILL FURNISH YOU A
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6½ H. P. MOTOR FOR

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This price includes:

Engine, sight feed lubricator, "Schebler" carburetor, bronze pump, grease cups, elevated brass timer with reversing lever, drain and relief cocks, flanged couplings, ball thrust bearings, 15" three-blade bronze propeller, six feet steel shafting, bronze stuffing box, guaranteed spark coil, mica spark plug, jump spark wire, battery wire, knife switch, one set (6) dry cell batteries, battery connections, lag screws, muffler.

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Compare the actual History of the engine and boat you thought best with that of the

ROCHESTER



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Find (if you can) an engine of corresponding price whose record can equal the Rochester's.

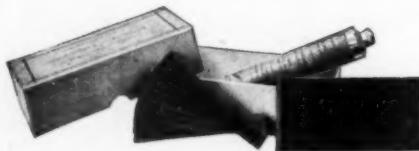
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Complete, Ready to Install

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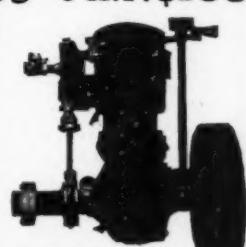
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1840 *Marine Accessories*

1910



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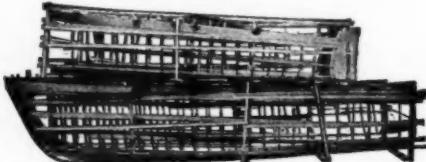
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First Quality in material and workmanship from fly-wheel to propeller. The MOST RELIABLE, DURABLE and ECONOMICAL Marine Motor made. The Engine that ALWAYS MAKES GOOD, because it is built right. Famous for endurance. Customers who bought the first engines write, "It is as good today as the day it was purchased, always goes, and never gives any trouble, have not spent a dollar for repairs." That is the engine you want.

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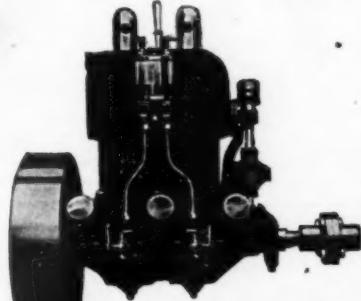
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Another Lackawanna Simplification
RESULTS FROM Gravesend Beach, N. Y.

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Valveless
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The World's
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The Double Cylinder Type

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means power, speed, low cost of upkeep, and complete satisfaction out of your boat—the result of perfect lubrication.

An efficient lubrication system is just as necessary as a good carburetor. An undependable lubrication system is far more costly than a poor carburetor, for without a proper supply of mixture the motor won't turn over,

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"DETROIT"

Valveless, Force Feed

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The Detroit Force Feed Oil Pump is of the sight feed two piston class. The charge of oil is taken from the oil reservoir, forced through the sight feed nozzle by one piston and then, from the sight feed chamber, is discharged into the bearing by the second piston.

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3. BRONZE CHIME WHISTLE.
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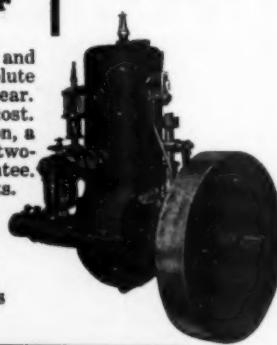
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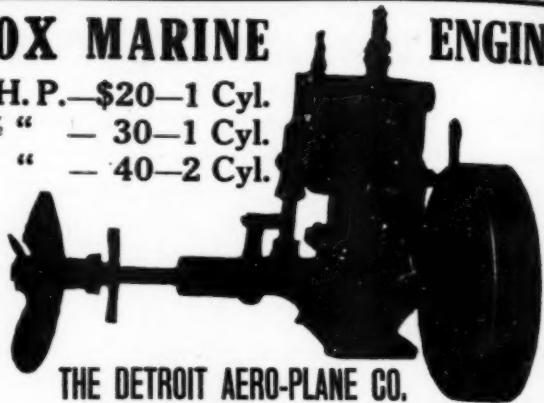
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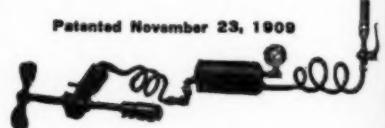
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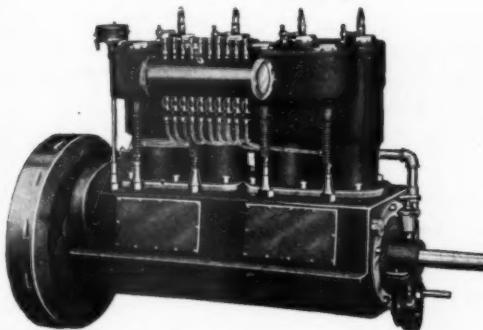
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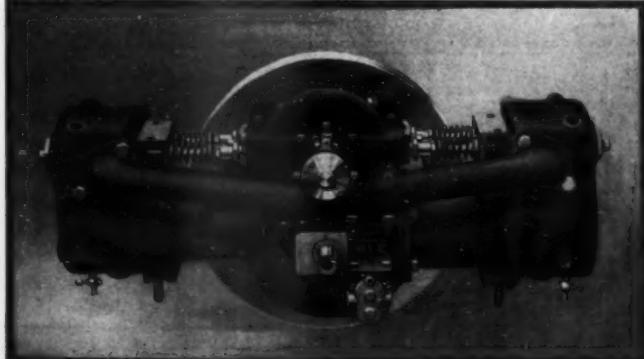
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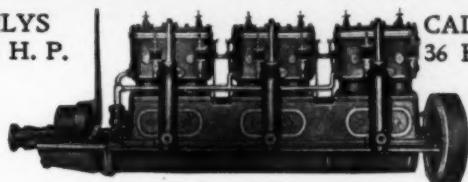
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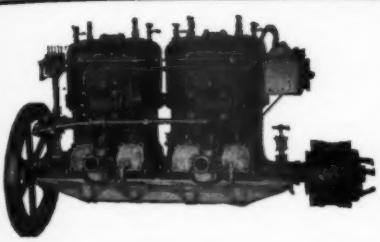


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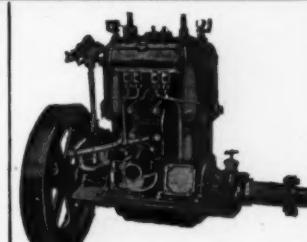


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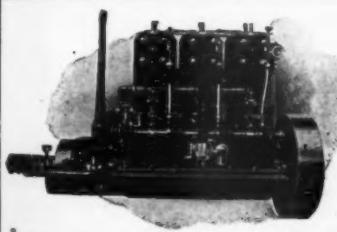
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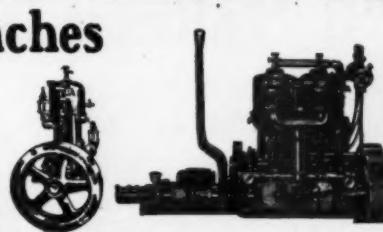


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These batteries were built to sell
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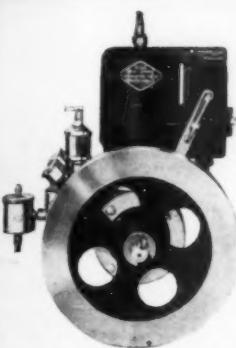
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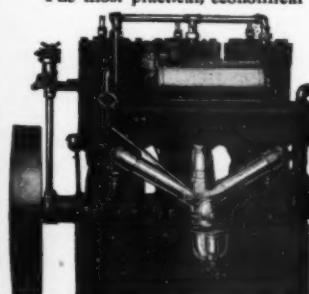
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LARGEST MARINE ENGINE BUILDERS

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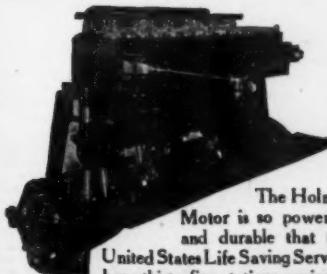
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THE MOST
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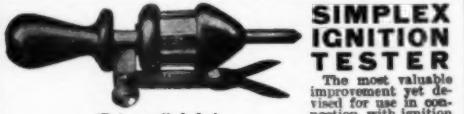
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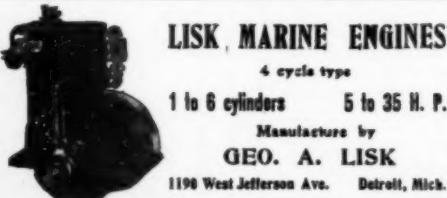


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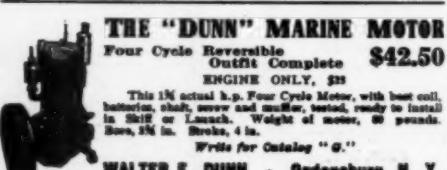
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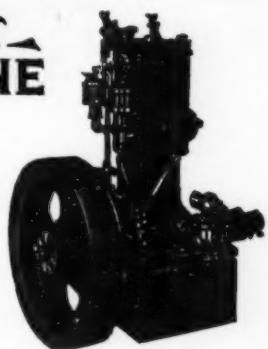
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are supreme in small motor craft. Among their special features which distinguish them from other motor boats of equal prices are the engine installation under hood, bulkhead style of engine control, underwater exhaust, convenient seating arrangement, etc.

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That's a long time, but it's a guarantee that we've never been asked to make good on.
Single cylinder; two cycle; reversible; sparking system absolutely waterproof; no valves; no gears; no automatic sparkers or springs; no anything that is troublesome or unreliable.
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"BUFFALO" ENGINES

For uninterrupted
PleasureFor dollar-getting
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It will save you much money, time and temper, if you buy an established engine that has made good in actual service for many years, for many satisfied users, rather than fall a victim to the engine seller who has a force feed lubricator in the roof of his mouth and whose oily tongue is not geared to his conscience.

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We are conservative—conservatively conservative—conservatively in that we under-rate BUFFALOS as to horsepower and do not make exaggerated claims, or lead you to believe we are giving you something for nothing.

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2 Cylinder, 12 H. P.

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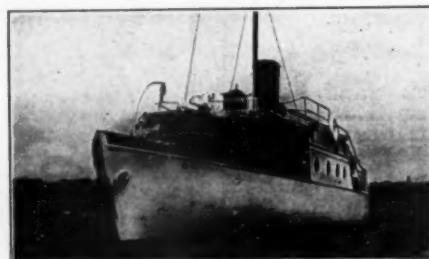
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Special Racing Engines to order
only in 4, 6, 8 and 12 Cylinders



Yacht Tarragon 65 ft. over all

Equipped 60 H. P. Lamb Motor

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This vessel is credited with the fastest time ever made by a
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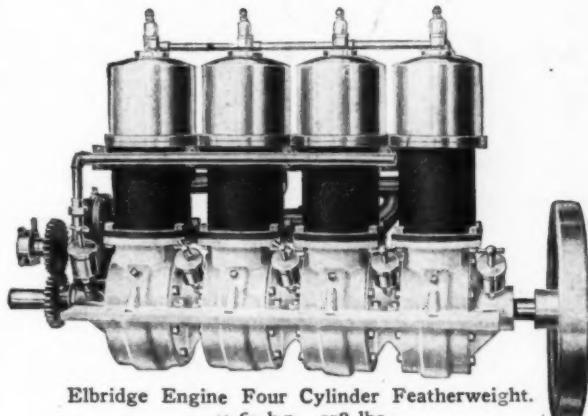
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FINE ENOUGH FOR AERONAUTIC NAVIGATION

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Every Elbridge engine—and there are seventy-five styles—is designed in the same drafting room and built in the same perfectly equipped factory by the same skilled mechanics.

The Elbridge Featherweight

Weighs 178 lbs. Develops 60 H. P.



Elbridge Engine Four Cylinder Featherweight.
40-60 h.p. 178 lbs.

Every one is covered by an unlimited guarantee.

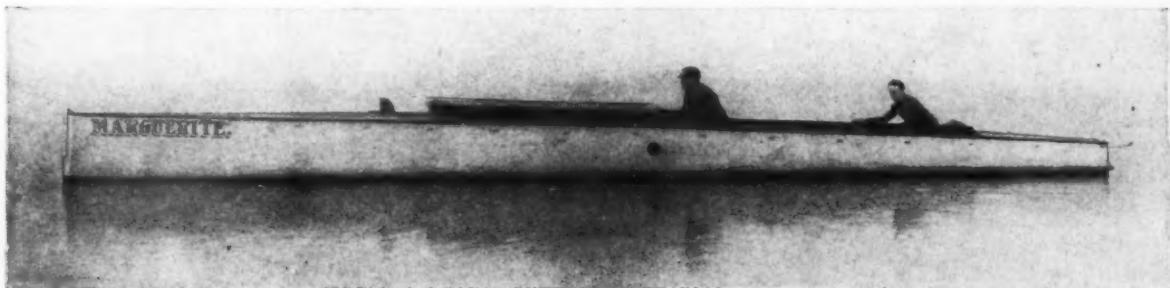
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Everyone interested in motor boating should have the new Elbridge Catalogue. It's FREE.

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The Marguerite with 100 H. P. Scripps Motor Wins River Championship at Peoria



MARGUERITE, owned by D. W. Voorhees, equipped with 100 H. P. Six-Cylinder Scripps Motor

At the first regatta of the season, held by the Illinois Valley Yacht Club, May 30, the Marguerite, owned by D. W. Voorhees and driven by his son, Danny Voorhees, won the free-for-all-championship of the river, at a record-breaking speed, in a thirty-mile gale. As the time for the race approached, tremendous seas were running and many boats that otherwise would have been entered were kept from starting on account of the state of the weather. Only one other boat made the trial with the Marguerite.

The two boats got away well, the Marguerite cutting her way through the high seas like an arrow. The second boat, however, showed difficulty in making headway against the heavy sea, and at the first turn was drowned out entirely. The high curlers broke clear over her, swamping the engines and making further effort impossible. The Marguerite, however, came through without a hitch, and finished the last stretch like a whirlwind.

The course has not been officially measured, but the speed of the Marguerite was estimated by local yachtsmen as at least 32 miles an hour.

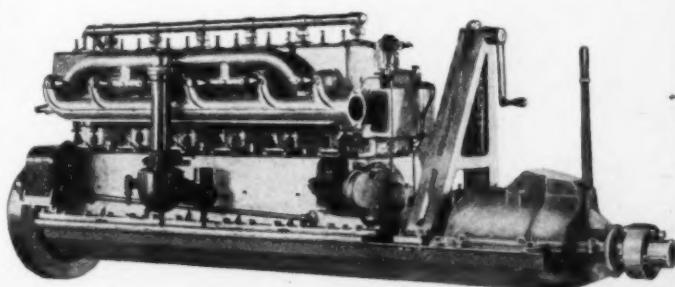
In a letter to us, Mr. Voorhees says: "Of course, the reason the 'Marguerite' ran so well is that she is equipped with a Scripps six-cylinder, 100 H.P. motor. The sea was tremendous. Ordinary boats could not weather it at all. With smooth water and strong competition, the 'Marguerite' could have shown considerably faster. After the competitors were drowned out, my son states that he shut the motor down to about eight hundred and fifty (850) revolutions. We can turn over one thousand. The reason he shut off part of the speed was on account of the high sea. This big Scripps motor is all right—simple, easy of operation and absolutely reliable."

This is but one more evidence of the absolute trustworthiness and efficiency of Scripps motors. The speed, power and efficiency which they show on the race course is equally important and sure in boats intended for cruising and every day service. Scripps motors are as carefully made as the finest automobile engines in the highest priced cars. They are four cycle in type and are made for every purpose and every size of boat. Our catalog shows the full line of Scripps motors from four to one hundred H.P., one to six cylinders. Not only are the motors fully described and illustrated, but the careful process of manufacturing is described in detail. Write for a copy today."

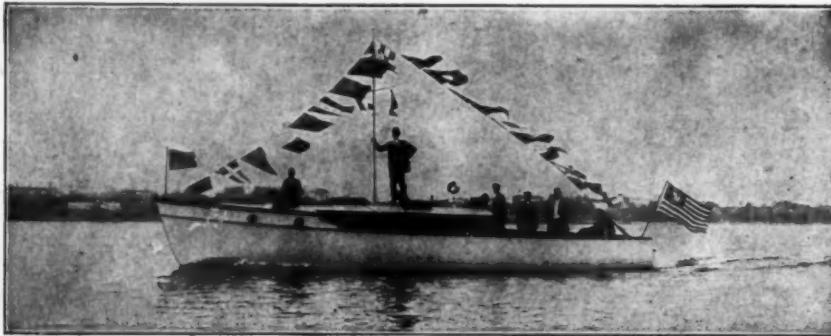
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651 Lincoln Avenue

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STERLING ENGINES



ALICE—THE BOAT

NARRAGANSETT BAY YACHT YARD

*Successors to
MILLER AND LUTHER*

Yacht and Power Boat Construction

RIVERSIDE, R. I., May 20, 1910

Sterling Engine Company, Buffalo, N. Y.

Dear Sirs:—

We want to take this occasion to congratulate you on the success of the Model B, 45-65 H.P., six cylinder engine which we put in the new express cruiser ALICE which we have just completed for Commodore C. F. Markham, of the Edgewood Yacht Club. The boat is very completely equipped and very heavy for a boat of her type and dimensions which are 45 feet over all and 8 feet 2 inches beam.

When launched the cradle swung under her and could not be freed by a power boat which we had for the purpose. We started the engine and backed her off under her own power and ran her around to an anchorage.

She has made a mile over a measured course at a rate of over fourteen miles per hour and has sustained a fourteen mile speed for three or four hours running, rather remarkable for a boat of her type, and she is easily the fastest boat outside of the automobile class, at present, in these waters.

The engine runs with as little noise and vibration as a sewing machine, starts easily and responds to control like a steam machine.

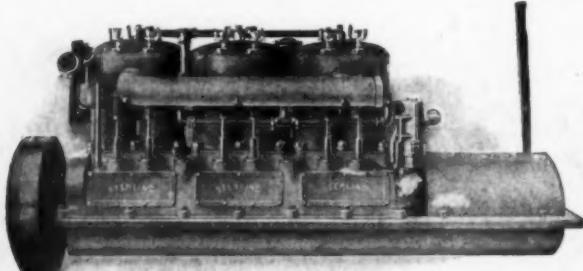
The owner is delighted with her performance and we felt that you would be interested in hearing how she has turned out.

We enclose photograph made about ten minutes after launching. She is running at about a thirteen mile speed and you will see that she makes practically no disturbance in the water.

Very truly yours,

NARRAGANSETT BAY YACHT YARD.

W. Woodburn Brett



45-65 MODEL B—THE ENGINE

STERLING ENGINE COMPANY
1254 Niagara Street, Buffalo, N. Y.

"Quality:—Of peculiar or characteristic superiority."

—STANDARD DICTIONARY.

The Marine Engine of Quality

Has made and upholds records. The reliability and endurance of Sterling Engines has been demonstrated time and time again. The letter reproduced here speaks for itself, and is only one of many like it received. Every Sterling owner gets just such satisfactory results, therefore why not you?

These engines are built in sizes from 8 to 240 H. P. to meet all marine requirements for cruisers, launches, runabouts, speed and work boats. We would like to have you send the dimensions of your boat, that is length, beam and draft, also speed desired, and we will mail you complete proposition on suitable engine.

The design and construction of Sterling engines appeals strongly to those who want the best. It assures power, capacity, reliability, and economy. We guarantee that—such is the care exercised in the selection of materials, in the workmanship applied, and in the methods of production—our engines, under fair treatment and reasonable freedom from abuse, will give better results, with the minimum of delay and expense for repairs, for a longer period than any others, and are second to none.

